DOCUMENT RESUME

ED 400 788 IR 018 136

TITLE	School-to-Work Transition.
INSTITUTION	ACCESS ERIC, Rockville, MD.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
REPORT NO	ERIC-96-5027; ISSN-1065-1160
PUB DATE	96
NOTE	37p.
AVAILABLE FROM	ACCESS ERIC, 1600 Research Blvd., Rockville, MD 20850; tel.: 1-800-LET-ERIC (subscription free; obtain back issues from EDRS).
PUB TYPE	Collected Works - Serials (022) -- Information Analyses - ERIC Clearinghouse Products (071)
JOURNAL CIT	ERIC Review; v4 n2 Spr 1996
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Cooperative Programs; *Educational Change; Elementary Secondary Education; *Labor Force Development; Models; Partnerships in Education; *School Business Relationship; Teacher Role; Tech Prep
IDENTIFIERS	ERIC; *School to Employment Program; *School to Work Transition

ABSTRACT

The "ERIC Review" announces research results, publications, and new programs relevant to each issue's theme topic. This issue explores the topic of preparing young people to make the transition from school to work. The lead article by Ray D. Ryan and Susan Imel, "School-to-Work Transition: Genuine Reform or the Latest Fad?," summarizes school-to-work initiatives and introduces issues raised by proponents and critics of this movement. Karen Cicmanec and Carol Boston discuss changes in teacher roles and student outcomes brought on by school-to-work programs in their article, "School-to-Work Transition in the K-12 Classroom." "The Tech Prep Option," based on ERIC resources and written by Bettina A. Lankard, Carolyn Prager, and Frankie Santos Laanan, describes the tech-prep model which involves school-to-work linkages between high schools and community colleges to train students in technical fields. In addition, federal initiatives to support school-to-work transition are discussed. Lists of electronic resources, selected school-to-work resource organizations, and selected readings are provided. News from the ERIC system and an action plan for building a successful school-to-work program are also included. (AEF)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 400 788

THE ERIC

Volume 4 • Number 2 • Spring 1996

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

- ☐ This document has been reproduced as received from the person or organization originating it.
- ☐ Minor changes have been made to improve reproduction quality.
- • Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Educational Resources Information Center
National Library of Education
Office of Educational Research and Improvement
U.S. Department of Education

ARTICLES

- ✓ **School-to-Work Transition: Genuine Reform or the Latest Fad?**
- ✓ **The Tech Prep Option**

IR018136

BEST COPY AVAILABLE

An Important Message to Our Readers

If you walk into the office of almost any high school guidance counselor in the country, you will quickly get a sense that college is the preferred destination of most young people. However, only about 60 percent of the nation's students actually enter college, and only about one-half of these ultimately earn a baccalaureate degree. College-bound or not, most students are destined for the workplace. The quality of their experience there depends in large part on their preparation.

This issue of *The ERIC Review* explores the topic of preparing young people to make the transition from school to work. The issues involved in that transition are multifaceted, touching on the purposes of schooling; the relationship between educators and employers; the necessity of making changes in teaching, learning, professional development, and assessment to better educate all students; and the challenge of predicting labor market trends in a changing economy.

Ray Ryan and Susan Imel's lead article summarizes school-to-work initiatives and introduces issues raised by proponents and critics of this movement. Shorter pieces discuss the roles of employers and educators, school-to-work linkages between high schools and community colleges to train students in technical fields (the tech prep model), and federal initiatives to support school-to-work transition. Lists of resource organizations and selected readings are included to help you explore school-to-work transition in greater detail.

The materials in this journal are in the public domain and may be reproduced and disseminated freely. If you would like more information about what the Educational Resources Information Center has to offer, details on how to access the database, or a referral to one of the 16 subject-specific ERIC Clearinghouses, please call 1–800–LET–ERIC, send e-mail to acceric@inet.ed.gov, or browse the ERIC system's Web pages (http://www.aspensys.com/eric).

U.S. Department of Education

Richard W. Riley
Secretary

Office of Educational Research and Improvement

Sharon P. Robinson
Assistant Secretary

National Library of Education

Blane Dessy
Director

THE ERIC Review
Educational Resources Information Center

Contents

School-to-Work Transition: Genuine Reform or the Latest Fad?
Ray D. Ryan and Susan Imel 2

School-to-Work Transition in the K–12 Classroom
Karen Cicmanec and Carol Boston 12

The Tech Prep Option
Based on ERIC resources by Bettina A. Lankard, Carolyn Prager, and Frankie Santos Laanan 14

Federal Initiatives Supporting School-to-Work Transition 18

A Sampling of Electronic Resources on School-to-Work Transition 19

Selected School-to-Work Transition Resource Organizations
Edward Pearce 20

Selected School-to-Work Transition Readings
Susan Imel 25

News From the ERIC System 30

Putting It All Together: An Action Plan 32

Editorial Board

Pat Coulter, Acting Director, ERIC Program, U.S. Department of Education, Office of Educational Research and Improvement, National Library of Education

Craig B. Howley, Director, ERIC Clearinghouse on Rural Education and Small Schools

Sandra Kerka, Associate Director for Database Development and Processing Coordinator, ERIC Clearinghouse on Adult, Career, and Vocational Education

Stuart Smith, Associate Director for Publications, ERIC Clearinghouse on Educational Management

Garry Walz, Director, ERIC Clearinghouse on Counseling and Student Services

The ERIC Review, published by ACCESS ERIC with support from the U.S. Department of Education's Office of Educational Research and Improvement (OERI), announces research results, publications, and new programs. It also contains information on the Educational Resources Information Center (ERIC), its subject-specific clearinghouses, and support components. The ideas and opinions expressed in this publication do not necessarily reflect the positions or policies of the Department of Education or OERI.

For more information about ERIC or a free subscription to *The ERIC Review*, call ACCESS ERIC toll free at 1–800–LET–ERIC.

ACCESS ERIC Director: Lynn Smarte
Managing Editor: Carol Laseski Boston
Graphic Artist: Tamara Lynn Lee
Copy Editor: Chadwick Bash

ISSN 1065–1160

ERIC
Your Education Information Network

The Educational Resources Information Center is a nationwide information service designed to make education literature readily accessible.

The ERIC system consists of 16 subject-specific clearinghouses, several adjunct clearinghouses, and support components, including ACCESS ERIC. At the heart of ERIC is the largest education database in the world—containing 900,000 abstracts of documents and journal articles. Curriculum materials, papers, conference proceedings, and literature reviews, along with abstracts of articles from nearly 800 education-related journals, can be found in the ERIC database.

You can access ERIC at more than 3,000 locations around the world. Typically, university, state, and large city public libraries offer access to ERIC through their microfiche collections and online or CD-ROM searches. The ERIC database is also accessible through some computer networks.

In addition, documents selected for the database are abstracted and announced in ERIC's monthly journal, *Resources in Education*. The full text of most documents announced in ERIC is available in microfiche or paper copy from the ERIC Document Reproduction Service, 1–800–443–ERIC. ERIC announces journal literature in a separate monthly publication, *Current Index to Journals in Education*.

ACCESS ERIC reference staff can answer questions about the ERIC system and its services and products and refer you to the clearinghouses, which contain vast subject expertise in various fields of education.

Gain entry to a world of education information. Call 1–800–LET–ERIC, Monday through Friday, 8:30 a.m. to 5:15 p.m. (eastern time). Requests can also be made by writing:

ACCESS ERIC
1600 Research Boulevard
Rockville, MD 20850

E-mail: acceric@inet.ed.gov

BEST COPY AVAILABLE

THE ERIC REVIEW

School-to-Work Transition: Genuine Reform or the Latest Fad?

by Ray D. Ryan and Susan Imel

Our economy is being damaged, and more importantly, young lives are being damaged, by our collective failure to help young people make a smoother transition from school to work (William T. Grant Foundation, 1988, p. 39).

Education is under pressure to change its approach to preparing youth for work to match the needs of a highly skilled society. Even without the pressure to produce more competitive workers, many educators acknowledge that the system, which has short-changed so many youth, needs to incorporate learning approaches (such as applied academics and authentic learning strategies) that will reach all young people.

Throughout this century, many instructional leaders, employers, researchers, and policy makers have tried to make explicit the connection between what occurs during the education of an individual and the skills, knowledge, and behaviors that individual will need in the workplace. The idea that students move from an educational situation into the workplace is not new; what may be new is the idea that the transition from the "schoolplace" to the workplace should serve as the cornerstone of all schooling beyond the elementary grades.

The premise of the school-to-work approach is that academic and career preparation should be integrated to support the career goals of virtually all students. Although the school-to-work concept has not been universally accepted as the best route for all youth, it has received support from policy makers, educators, and the business community.

Several trends have converged to stimulate this interest in school-to-work transition, including changes in U.S. economic competitiveness and in the workplace. The United States has experienced a decline in global competitiveness in part because its education system has failed to adequately prepare most students to enter the workplace, which increasingly demands adaptable and flexible workers with high levels of academic and technical skills (Brustein and Mahler, 1994; National Governors' Association, 1994).

Changes in the economy and in the workplace have also complicated the school-to-work transition. In the 1950s, the U.S. economy was able to absorb dropouts and less well prepared students into the manufacturing sector. Now there are many fewer manufacturing jobs, the population is aging and remaining in jobs longer, more women are in the paid labor force, and immigration has increased. All these factors necessitate more careful school-to-work planning than ever before.

Approximately 60 percent of youth pursue some form of postsecondary education, but only about one-half of these students are successful in completing a baccalaureate program (Kazis, 1993; Smith and others, 1994). Some authors suggest that the U.S. education system has been turning out prospects with the type of general, nontechnical skills that most employers traditionally have needed (see, for example, Kazis, 1993; Mendel, 1994).

Now, however, research shows that cognitive, technical, human relations, and workplace skills—combined with postsecondary education—pay off in a labor market being transformed from low skill to high skill (Halperin, 1994; Secretary's Commission on Achieving Necessary Skills, 1991). This finding is a central conclusion of the National Assessment of Vocational Education (NAVE), a major federal study (1989–94) that examined the impact of federal aid to vocational education and the contribution of vocational education to individuals' educational and economic outcomes. As Boesel and McFarland (1994) note in their summary report to Congress:

Ray D. Ryan is Executive Director, Center on Education for Training and Employment, The Ohio State University, and Susan Imel is Director, ERIC Clearinghouse on Adult, Career, and Vocational Education, Center on Education for Training and Employment, The Ohio State University.

At the secondary level, the development of cognitive skills seems to be pivotal, because it helps prepare students both for work and for postsecondary education. Strong cognitive skills also facilitate learning occupation-specific skills, and are the basis of lifelong learning. Broad technical competencies, such as computer literacy or mechanical and electronic knowledge, can help prepare students for a wide range of jobs; and because they include a sizable cognitive component, they can also contribute to college prospects (p. 26).

Education tends to react to political, economic, and social trends. In the 1960s, for example, in response to the Soviet launching of the satellite Sputnik, schools emphasized the teaching of mathematics and science. In the 1980s, the failure of the nation's schools to provide adequate academic education for young people, as described in *A Nation at Risk* (National Commission on Excellence in Education, 1983), spurred a "return to the basics." Now, the need for a more competitive workforce is driving the school-to-work movement. But can school-to-work transition efforts succeed in reforming the nation's education system when other reform efforts have failed?

Even if the school-to-work movement becomes another example of a short-term political and policy agenda, it contains the seeds of relevant education reform and has the potential for long-lasting impact. As either a policy or an education agenda, however, school-to-work reform has sparked controversy. Following an overview of school-to-work transition efforts to date, this article examines a number of issues affiliated with the school-to-work movement. These issues, which must be addressed if school-to-work programs are to succeed, have been raised by both proponents and critics of school-to-work efforts.

School-to-Work Transition: An Overview

Definitions of school-to-work transition are influenced by knowledge of school-to-work programs in local areas, knowledge of the school-to-work movement in general, and perceptions of how the school-to-work emphasis fits in with systemic change. Local school-to-work program efforts are driven primarily by local needs. Currently, a patchwork of initiatives exists, but a movement is under way to create school-to-work systems by connecting individual programs. This overview defines school-to-work transition and then describes the current status of system building.

School-to-Work Transition: What Is It?

In its ideal form, the school-to-work approach is envisioned as "a systematic, comprehensive, community-wide effort to help all young people (1) prepare for high-skill and

The School-To-Work Opportunities Act In Brief

Signed into law by President Clinton in May 1994, the School-to-Work Opportunities Act:

- Provides states and local communities with seed money to build school-to-work systems that prepare young people for high-skill, high-wage jobs or further education.
- Requires that every school-to-work system have three essential elements: work-based learning, school-based learning, and connecting activities. *Work-based learning* includes structured work experiences, mentoring, and instruction in industry-specific skills; *school-based learning* encompasses high academic achievement and career counseling; and *connecting activities* match students with employers and bring classrooms and workplaces together.
- Specifies that school-to-work systems integrate school-based and work-based learning, academic and vocational education, and secondary and postsecondary education.
- Encourages partnerships among key stakeholders, including educators, employers, and representatives of labor and community-based organizations.
- Considers existing programs such as tech prep, youth apprenticeship, cooperative education, and career academies as building blocks for comprehensive school-to-work systems.
- Administers implementation funds in "waves" to allow states and local districts to develop sound plans and learn from system-building efforts elsewhere.
- Provides technical assistance and support to enable school-to-work systems in each state to continue successfully after the federal investment ends.

For more information about the School-to-Work Opportunities Act, see Federal Initiatives Supporting School-to-Work Transition on page 18.

high-wage careers, (2) receive top quality academic instruction, and (3) gain the foundation skills to pursue postsecondary education and lifelong learning" (Halperin, 1994, p. 4). The following assumptions support this broad vision for school to work:

- Young people should have active, not passive, learning experiences. Most students learn best in real-world contexts; therefore, the workplace, community, home, and neighborhood should all be viewed as places to learn.
- Demonstrating competence should be the cornerstone of school-to-work programs, requiring modification of the time-based structures of most high schools.
- Caring and successful adults should serve as mentors, role models, and coaches to students. Research reveals that this support is critical to young people's success. It underlies the cognitive apprenticeship model, in which young people tackle complex, authentic tasks by working within a community of learners under expert guidance.

As the existing patchwork becomes more connected, the concept of a school-to-work transition "system" is evolving that integrates school-based and work-based learning, combines academic and vocational education, and links secondary and postsecondary education. School-to-work systems are actually composed of a number of different programs, or building blocks. Cooperative education, career academies, tech prep, and youth apprenticeship are mentioned most frequently (Mendel, 1994). Charner (forthcoming) describes a mosaic or patchwork quilt of programs in three broad categories: learning from work experience, academic/vocational linkages, and core support services (see figure 1). These programs are described in figure 2 on page 5.

Although no single school-to-work model has been universally accepted in the United States, the consensus is that systems must build on strategies that have worked thus far and include school-based, work-based, and connecting components (Jobs for the Future, 1994). Characteristics of successful systems include:

- Employer involvement to provide paid or unpaid work experience and structured worksite learning.
- Integration of academic and vocational learning that includes applied teaching.
- Coordination between and integration of school and workplace learning, including block scheduling.
- Career exploration, guidance, and preparation throughout elementary and secondary school.
- Articulation between high school and postsecondary programs.
- Collaboration among institutional partners involved in program implementation.
- Recognition of program completion through certificates acknowledging academic and occupational skill mastery.
- Adequate funding and other resources.
- Training and staff development for teachers and worksite supervisors.

Figure 1: School-to-Work Programs

Learning From Work Experience
- Cooperative Education
- Naturally Occurring Jobs
- School-Based Enterprises
- Service Learning
- Youth Apprenticeships
- Vocational Education

Academic/Vocational Linkages
- Career Academies
- Linking Teachers
- Tech Prep

Core Support Services
- Career Exploration and Awareness
- Career Information
- Career Guidance
- Credentialing System
- Job Search and Interviewing

Source: Charner (forthcoming)

Weaving existing programs into systems is a relatively recent, but strategic, phenomenon within the school-to-work movement. Without system building, innovative school-to-work programs risk remaining idiosyncratic and disconnected. According to Jobs for the Future (1994), "as much as possible, the various approaches to linking school and work should head in the same direction and should be part of a whole rather than a contradictory set of isolated experiments. Otherwise, the nation will continue to create and promote a bewildering set of options for schools and young people." In the United States, states have assumed responsibility for building school-to-work transition systems. The next section reports on efforts to date.

School-to-Work Transition: Status of System Building

The School-to-Work Opportunities Act of 1994 (see box on page 3) was designed to assist states in system building. Under the act, all states received planning grants, and eight—Kentucky, Maine, Massachusetts, Michigan, New Jersey, New York, Oregon, and Wisconsin—were awarded first-round implementation grants to expand their school-to-work systems (Dykman, 1994). An additional 19 states have since been awarded implementation grants.

Reform leaders view state governments as the major vehicles for creating school-to-work transition systems. Not only do state officials control most of the public education resources, they are also the logical choice to assume leadership of the systemic changes needed to produce school-to-work opportunities on a large scale (National Governors' Association, 1994; Reisner and others, 1994). NAVE offers empirical evidence that when states support reforms, local school districts are more active in integrating academic and vocational education

BEST COPY AVAILABLE

and in developing performance standards (Boesel, Rahn, and Deich, 1994).

State systems should provide "the infrastructure to guide and support local programs, while permitting sufficient flexibility so that local programs can meet their diverse needs" (National Governors' Association, 1994, p. 2). They should include the following elements:

- Clear goals.
- Public understanding of and support for school-to-work efforts.
- Occupational and labor market information resources.
- Skill standards.
- Performance-based assessment tools.
- Portable skill certificates.
- Evaluation mechanisms.

Many of these elements are being examined by the National Skill Standards Board, a group authorized under Goals 2000 to encourage the creation and adoption of a national system of voluntary skill standards. The U.S. Departments of Education and Labor initiated a public-private partnership to develop voluntary skill standards for various industries. In 1992 and 1993, these two departments funded 22 pilot projects (16 by Education and 6 by Labor) to develop voluntary skill standards for such major industrial and technical areas as metalworking, printing, bioscience, and electronics. The skill standards being piloted are compatible with world-class levels of industry performance, tied to measurable, performance-based outcomes that can be readily assessed, and comparable across industries, similar occupations, and states.

As part of its efforts to streamline government, the 104th Congress is proposing a major consolidation of employment and training legislation (including school-to-work initiatives) in some form of block grants. If these changes are effected, the federal role in school-to-work transition will be sharply reduced (Imel, 1995). With or

Figure 2: The Mosaic of School-to-Work Transition Programs and Services

Career Academies
School-within-a-school programs featuring curricula and activities built around a particular industry cluster such as health or graphic arts.

Career Exploration, Information, and Guidance
Means by which counselors and teachers help students assess their skills and areas of interest, understand occupations and careers, and explore the education and training requirements, job tasks and duties, and local and national labor market characteristics related to the careers in which they are interested.

Compacts
Agreements involving an area's schools, businesses, institutions of higher education, labor unions, and political entities in which schools promise improved academic achievement and work preparation in exchange for job or higher education guarantees for students who stay in school and perform well.

Cooperative Education
A vocational program usually administered by a school coordinator that provides students with part-time jobs during the school year in their chosen vocational field. The program includes a training plan that clearly specifies what the student is expected to learn on the job.

Credentialing System
A system that enables students to show employers or postsecondary institutions that they have achieved certain skills, competencies, or levels of knowledge. It is based on industry standards and tied to measurable, performance-based outcomes.

Job Search and Interviewing
Activities such as real and simulated job interviews, resume writing, job search exercises, and presentation skills that prepare students to enter the world of work.

Linking Teachers
Arrangements in which academic and vocational teachers team teach courses or work together to deliver project-based instruction.

Naturally Occurring Jobs
Paid work experiences that students find on their own to earn money, keep busy, or learn skills.

School-Based Enterprises
Student-run businesses such as child care centers and stores that enable students to learn occupational and business management skills while offering goods or services to their communities.

Service Learning
Programs in which students learn through meaningful community service opportunities such as tutoring, working with the elderly, or volunteering at hospitals. Students reflect on their experiences through structured classroom activities.

Tech Prep
Programs that link the last 2 years of high school with the first 2 years of college or technical school in specific occupational areas. Tech prep programs typically have a strong applied academics focus and limited work experience components. (See "The Tech Prep Option" on p. 14 for more information.)

Vocational Education
Educational programs based in high schools, vocational and technical schools, or regional vocational technical centers that prepare students for various clerical, technical, and other career opportunities through work experience in classrooms, shops, labs, or on the job.

Youth Apprenticeships
Programs based on European training systems that integrate and coordinate work-based and school-based learning. Employers generally provide paid work experience and structured worksite learning while schools integrate academic and vocational learning. Programs usually last at least 2 years, with links between high school and postsecondary learning.

Source: Charner (forthcoming) and Kazis, 1993

BEST COPY AVAILABLE

without federal leadership, states are making progress in developing school-to-work activities. Some are financing statewide tech prep, youth apprenticeship, and career academies. Others are rewriting their education and training laws and restructuring their youth preparation and workforce training systems. Indeed, as early as 1993, relevant education reforms were under way in 20 states in areas such as helping students plan careers and select specializations, offering certification and performance-based assessments, integrating academic and vocational education, improving articulation with postsecondary institutions, and arranging workplace linkages (Boesel, Rahn, and Deich, 1994).

Two states—Oregon and Wisconsin—have passed comprehensive reform packages already (National Governors' Association, 1994). A report on the efforts of eight states to develop youth apprenticeship systems concluded that in the early stages authorizing legislation was not necessary to facilitate school-to-work system building (Reisner and others, 1994). Even though almost all states report some school-to-work system-building activity, "by and large, states are on the front end of system development with most of the work still to be done" (National Governors' Association, 1994, p. 6).

School-to-Work Transition: What Are the Issues?

Sometimes called "problems," "barriers," or "deterrents," a number of issues have emerged as implementation of school-to-work efforts has moved forward. Many issues that surfaced during program implementation at the local level can be addressed by making adjustments in program design. Others reflect ingrained attitudes and beliefs about the purposes of education and education's role in society. Issues in the latter category, which tend to influence policy decisions, are discussed here. Although treated separately, they are interrelated.

Who Is in Charge?

Should economic or educational priorities drive school-to-work transition efforts? Should systems be designed to develop a highly skilled workforce that will improve economic investment and growth within the state, or should they focus on the achievement of superior educational performance by all students, including those not planning for a 4-year degree? Should systems be designed to prepare students for immediate employment, or should they develop general cognitive abilities? These issues are at the heart of current system-building efforts and their resolution will determine the outcome of school-to-work system building within individual states.

A study of youth apprenticeship system building in eight states sponsored by the Council of Chief State School Officers revealed that states differed in the amount of emphasis placed on economic development and on education (Reisner and others, 1994). Ideally, school-to-work system building should reflect both educational and economic development needs but, as the report suggests, that balance is difficult to achieve:

> *In most places, the state's role in education is stronger and clearer than it is in either business (where the state role has historically been confined largely to regulation) or employment training (where the states typically play neither a leadership role nor act as a force in determining labor market demand). Even in education, the state role is overshadowed by the decision-making and operational responsibilities of local school districts. Hence, in each of these arenas, state influence must be derived from the state government's marketing, technical assistance, and grantmaking capabilities and from its ability to develop state-level organizational mechanisms that can move state policies and bureaucracies in complementary directions. This is a tall order, given the short time frames within which most elected officials operate, the condition of state budgets, and competing special interests* (p. xx).

In a discussion of state and local issues related to school-to-work transition, Choy (1994) also describes states' lack of control in certain areas that affect system development. States have little or no control over resource allocation at the local level; states typically have separate administrative offices for secondary and postsecondary education; and states have no authority to force employers to participate in or regulate worksite learning.

Some critics of school-to-work initiatives suggest that economic development needs predominate and that they place "too much emphasis on bread winning" (Mendel, 1994, p. 16), with too much time devoted to preparing youth for occupations at the expense of preparing them for their role as citizens. Some advocates of school-to-work programs respond to this criticism by pointing out that lack of opportunities for occupational preparation for many young people contributes to social problems such as drug abuse and teen pregnancy. Others note that because school-to-work activities are contextual and hands-on and offer more choices, they can meet these students' learning needs and increase their engagement.

Learning to think and learning to work need not be mutually exclusive choices. Youth can prepare for specific jobs and for high performance workplaces featuring flatter organizational structures; work done by teams of highly skilled workers; and a focus on flexibility, quality, customer service, and continuous improvement (Kerka, 1995).

At the local level, different forces (for example, social, economic, or educational) drive school-to-work efforts. The current patchwork seems to be building momentum for school-to-work reform nationwide, but at this stage it is impossible to tell what forces, if any, will ultimately drive a national school-to-work agenda.

Is the School-to-Work Movement Central to Education Reform?

A second fundamental issue is the extent to which school-to-work efforts are perceived as central to education reform. Can efforts to develop school-to-work systems become an integral part of general efforts to reform education, or will school-to-work initiatives be seen merely as an additional programmatic effort? Will approaches to learning advocated in school-to-work models become widely adopted?

Educators have differing perspectives on the role of the school-to-work philosophy in education reform. At least three scenarios seem possible (National Governors' Association, 1994, p. 3):

- School-to-work transition will become the basis for restructuring all levels of education, promoting school reform, and improving student performance.
- School-to-work transition will become the basis for reforming education for students in the general track (the middle majority), with college preparation and special education left unscathed.
- School-to-work transition will result in a series of programs added to the general curriculum.

These perspectives reflect contrasting attitudes about how students should learn and about the role of education in preparing young people for work. They also reflect choices that will need to be made regarding system building at the state level. For example, states such as Oregon and Wisconsin that have passed legislation authorizing the restructuring of their youth preparation and workforce training systems have obviously chosen the first scenario.

School-to-work learning theories are congruent with ongoing reform efforts in the larger field of education. For example, the type of learning found in school-to-work programs has many of the same features as authentic learning and instruction. Both promote higher order thinking, depth of knowledge, and connectedness to the world beyond the classroom and provide social support for student achievement (Halperin, 1994; Newmann and Wehlage, 1993).

New Wine in Old Bottles?

Is school to work merely another name for vocational education or does it represent a transformation of the education system? This issue may well be the thorniest discussed thus far because it deals with ingrained attitudes about education. Although its strongest proponents conceive of school to work as a system for all students (for example, Halperin, 1994; Jobs for the Future, 1994), others see it as another form of vocational education. Parents' attitudes about what they want for their children represent one of the greatest barriers to successful implementation of school-to-work programs. Even though vocational education does not close the doors to college, most parents still believe college preparation is best for their children despite evidence that most youth never complete a 4-year degree and that a large percentage of jobs created in the next 10 years will not require one. Most youth plan to enroll in postsecondary education—although not necessarily right after high school (Choy, Alt, and Henke, 1994; Kazis, 1993; National Governors' Association, 1994; Southeastern Regional Vision for Education, 1995). High school guidance counselors, who spend most of their time advising youth about college, often reflect the current attitudes and reward structure of the school and society. Rather than asking young people, "Where do you want to go to college?" they should be asking "What type of work would you like to do and in what environment?" (Southeastern Regional Vision for Education, 1995).

Lack of understanding of school-to-work goals and strategies has led some to think of this approach as "lesser than" a more strictly academic approach, rather than perceiving these programs as opportunities for all students to benefit (Mendel, 1994; National Governors' Association, 1994; Southeastern Regional Vision for Education, 1995). Considering that school-to-work planners are dealing with an education system that is very entrenched, having isolated academics for 70 years, real reform will require a change in attitude on the part of many administrators, teachers, counselors, and parents (Ohio Council on Vocational Education, 1994).

Colleges and universities also need to buy into the school-to-work approach if local partnerships are to serve all students. If institutions of higher education are unwilling to accept applicants' high school credits earned through applied and work-based learning experiences, a school-to-work system may have difficulty attracting college-bound youth.

Are School-to-Work Programs Another Attempt To Track Students?

A corollary of the image issue is the perception that school-to-work programs are yet another effort to track students. Questions related to this issue include: "Will participation in school-to-work programs limit my child's immediate potential to enroll in a 4-year degree college program?" and "Should all students have the applied curriculum that is offered in a school-to-work initiative?" Again, a range of opinions surround the tracking question. Mendel (1994) believes it is the wrong question, saying that tracking is already inherent in the U.S. education system. Halperin (quoted in Mendel, 1994, p. 13) says, "We're not talking about making it worse, we're talking about making it better." Properly designed, school-to-work systems will create new and different educational options for all young people, giving them the foundation they need to begin and continue successful career transitions throughout their working lives.

To avoid tracking, school-to-work systems must be designed so that the

4-year college degree is an option. They must also appeal to a wide range of students and avoid the appearance of serving only low-achieving students (Hoachlander, 1994). If school-to-work initiatives are limited to noncollege-bound youth, it would not only detract from the image of the school-to-work movement, it would also "reproduce in the new system one of the defining characteristics of traditional vocational education" (Stern and others, 1994, p. 142). The United States does not need any type of education system that limits its youth.

How Accessible and Equitable Are School-to-Work Activities?

Intertwined with the issue of tracking are questions about the accessibility and equity of school-to-work activities. Will they be equally available and accessible to all students, including those with disabilities? Will they reach and serve out-of-school youth? Will the system perpetuate traditional occupational segregation along race and gender lines? Not only do some critics feel that school-to-work reform is just another example of tracking, they also feel that it will screen out poor and disadvantaged youth in an effort to provide employers with the "best students" (Mendel, 1994). A study of model school-to-work demonstration sites revealed that female participants were concentrated in traditional female occupations and were "virtually absent from technical and high-wage training areas" (Milgram and Watkins, 1994, p. 1).

Many of the questions related to access and equity that have long plagued education now need to be addressed in school-to-work efforts. However, the goal of building an effective system for many need not clash with the goal of ensuring successful participation for those with special needs and the disadvantaged as long as appropriate investment and support are provided for those who need it (Mendel, 1994).

Can Business Respond to School-to-Work Requirements?

Issues surrounding the role of business in school-to-work programs include providing paid and unpaid worksite learning experiences for youth, creating high-skill jobs, and addressing traditional attitudes toward hiring young people. Because a worksite learning experience is a key element of the school-to-work approach, employers are essential to its successful implementation. Many employers believe that students learn best at the worksite and that providing this experience saves money in the long term. Indeed, 19 chief executive officers of such leading companies as Ford Motor, American Express, and Eastman Kodak have acted on this principle by founding the National Employer Leadership Council, which promotes work-based learning opportunities for all students.

> ***"Participating in school-to-work activities can change employers' attitudes."***

However, not everyone agrees that it is practical, economically feasible, or logistically possible for employers to provide this component. In Ohio, for example, there are not enough paid positions in the workforce to place 250,000 11th- and 12th-graders, and many employers either cannot or will not absorb the cost. According to one Ohio business owner, who helped develop the School-to-Work Opportunities Act, "In a high performance workplace, we do not have the time. It's impossible. And when you look at the liability question, it's doubly impossible. One of my top welders could go to a school and show a student what he needs to know. They don't need to come here and stand beside a machine" (Ohio Council on Vocational Education, 1994, p. 11).

According to NAVE, there are currently about 6 million students nationwide in grades 11 and 12. Co-op programs serve about 400,000 of these students, and youth apprenticeship programs serve several thousand more. Finding positions to accommodate even one-quarter of the nation's high school juniors and seniors would require a mammoth effort, particularly since many employers are concerned about the costs associated with supervising and training students or have negative opinions about the quality of young workers (Boesel, Rahn, and Deich, 1994).

Participating in school-to-work activities can change employers' attitudes. A survey of 270 employers participating in local youth apprenticeship or cooperative education programs in seven cities showed that 90 percent either "agreed" or "strongly agreed" that students become productive workers. Eighty-six percent of the employers indicated that they were satisfied with schools' ability to provide students with the entry-level skills they need (Lynn and Wills, 1994). In a study of nonparticipating employers in the same geographic areas, Zemsky (1994) reported that they generally felt that young people lacked discipline, good work attitudes, and communication skills and that schools did not prepare them well for employment.

In a review of 15 youth apprenticeship demonstration programs funded by the U.S. Department of Labor, Corson and Silverberg (1993) concurred that the biggest problem most school-to-work programs face is obtaining firm commitments from employers to provide students with worksite positions. Recruiting employers is time consuming, and differences in the type and amount of work, equipment, and staff available at each site can lead to differences in what students learn.

Another aspect of the business response has to do with the creation of high-skill jobs for which youth need to be prepared and that a high-wage economy demands (Kazis, 1993). It is still unclear to what extent companies are transforming themselves into high performance organizations requiring the skills that school-to-work programs will be designed to develop. Although one-fourth to one-third of U.S. firms have taken steps toward higher performance, in many of them only a small percentage of their workforce is affected (Kerka, 1995). The push toward streamlining and cutting costs is also likely to have a negative effect on young workers.

A final set of issues concerning the business response to school-to-work reform has to do with the reluctance employers traditionally have shown to hiring 18- to 25-year-olds. Youth in this age group have experienced job instability, working in short-term jobs that require little of them (Kazis, 1993). According to Osterman (1992, quoted in Kazis, 1993), "Roughly one-third of all high school graduates, and somewhat more high school dropouts, fail to find stable employment by the time they are 30. . . . For this group the rather casual American system does not work well" (p. 3). Will a school-to-work infrastructure improve opportunities for youth to begin a career ladder earlier in their lives?

The issues affiliated with the role of business in the school-to-work movement are complex. Even though many are related to economic, social, and political factors beyond the control of school-to-work planners, they must be understood and addressed when developing school-to-work programs.

Where Is the Research?

Because many state school-to-work systems are in their early stages, evaluations of them are still preliminary. Recipients of School-to-Work Opportunities Act grants have begun to report progress toward various performance standards, however, and meeting such standards will influence

Employer Involvement in School-to-Work Transition

Paid work experience and structured worksite learning—two key ingredients of school-to-work transition programs—can be accomplished only by involving business, the public sector, and nonprofit organizations. Although employers want to be full partners in school-to-work efforts, program developers may think of them only in terms of their ability to provide a requisite number of positions. Most employers want to contribute in other ways and are motivated to do much more. The two most common reasons that employers give for participating in school-based programs are to prepare for existing or projected workforce skill shortages and to enhance community relations (Gittleman, 1994; McNeil and Kulick, 1995).

Employers take part in school-to-work programs also because they perceive that such programs will give them the opportunity to:

- Influence curriculum development to better meet industry standards.
- Screen potential employees.
- Network with other employers.
- Allow employees to interact with students, increasing workers' understanding of their jobs.
- Influence the community's economic future.

A study of five employers representing five industries drew the following conclusions about employers' perceptions of their roles in school-to-work programs:

- Employers want to be equal partners in the school-to-work process; they do not want to be brought in only to comply with the requirements of a law or regulation.
- During recruitment, the school-to-work concept should be explained fully to employers, with emphasis on the fact that employers can shape their role to suit their situations.
- Employers do not engage in school-to-work programs with the intent of hiring all the students involved, but they do want the option of hiring students who are highly skilled.
- Employers making the largest financial commitment and providing paid, structured, work-based learning experiences view preparation for work as a significant goal for school-to-work programs.
- When describing school-to-work program opportunities, planners need to be as specific as possible. Employers may be unfamiliar with or have negative perceptions of programs such as tech prep, youth apprenticeship, cooperative education, and vocational education.
- Both financial and nonfinancial incentives motivate employers to participate in school-to-work programs. Tax incentives, student wage subsidies, and reimbursement of staff assigned to train students in work-based learning components could be important financial inducements. The most important nonfinancial catalyst would be the creation of intermediary organizations to act as a bridge linking schools, employers, and students (McNeil and Kulick, 1995).

Employers are a major stakeholder in school-to-work efforts. They perceive their role in school-to-work programs in varied ways, according to company size, the degree to which the company is experiencing a shortage of skilled entry-level workers, the degree to which the company is engaging in high performance work activities, and the degree to which the employer is motivated by concern for local youth (Tucker, 1995). Before enlisting the assistance of individual businesses, planners would do well to understand how they rate on each of these characteristics.

policy makers toward funding activities that help citizens and communities become more prosperous and that increase student engagement and achievement.

Other emerging research is also promising. Two recent studies—American Youth Policy Forum-Jobs for the Future, 1995, and Pauly, Kopp, and Haimson, 1994—reported on the progress of 21 programs in place around the country. Five programs were included in both studies. The studies' findings were favorable, but did not reveal what impact, if any, school-to-work programs have had on types of employment found, wages, and labor force participation rates. Also, the results are based on a limited number of specially selected programs.

Pauly, Kopp, and Haimson (1994) drew the following conclusions:

- School-to-work programs use a variety of program designs customized to suit local circumstances.
- School-to-work programs serve a broad cross section of students and provide access to college and other postsecondary options.
- School-to-work programs need extra resources for effective implementation.
- Providing large numbers of high school students with intensive work-based learning will require a major effort to recruit employers and to expand the commitment of employers already participating.
- School-to-work programs that start early—by grades 9 or 10—can reach students before they become disengaged or drop out of school.

The American Youth Policy Forum-Jobs for the Future (1995) report reviewed 10 programs over the course of a year and reported the following positive findings:

- Programs experienced significant expansion in the numbers and types of students, industries, and schools.
- Programs had significant and sustained employer involvement, and the intensity of that involvement increased over time.
- Significant percentages of students enrolled in postsecondary education and training.
- Students, employers, and teachers were extremely supportive of the school-to-work approach.

Other case studies have indicated positive outcomes for students and for employers participating in school-to-work activities. School-to-work graduates at some sites were more likely to be employed, more likely to be enrolled in postsecondary training, and more likely to have higher incomes and professional standing than were nonparticipating students. Participating students also reported greater motivation and empowerment from taking on responsibilities, making choices, and engaging in meaningful activities. Business gains included a new understanding of the capabilities of young people as well as opportunities for employees to improve their leadership, supervisory, mentoring, and training skills (Rogers and others, 1995).

Conclusion

This discussion has presented a number of current perspectives about the school-to-work transition movement. School-to-work initiatives represent one of the nation's most promising education reform movements, and initial research findings are optimistic, suggesting that this approach has much to offer as an educational tool. Developing systems that tie current school-to-work program efforts together will take resources, commitment, and leadership. Educators and the business community must move the school-to-work agenda forward, as educators alone cannot implement effectively the school-to-work vision. In fact, to give all students the opportunities that a broad school-to-work movement can create, the involvement of civic organizations and many other groups will be critical.

A number of national groups and organizations engaged in building or supporting a school-to-work infrastructure are listed on pages 20–24. They can be consulted for additional information about school-to-work transition.

References

American Youth Policy Forum and Jobs for the Future. January 1995. *Promising Practices: A Study of Ten School-to-Work Career Programs. Congressional Briefing Overview.* Boston: Jobs for the Future.

Boesel, D., and L. McFarland. July 1994. *National Assessment of Vocational Education. Final Report to Congress. Volume I. Summary and Recommendations.* Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education. ERIC Document Reproduction Service No. ED 371 191.

Boesel, D., M. Rahn, and S. Deich. July 1994. *National Assessment of Vocational Education. Final Report to Congress. Volume III. Program Improvement: Educational Reform.* Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education. ERIC Document Reproduction Service No. ED 371 193.

Brustein, M., and M. Mahler. 1994. *AVA Guide to the School-to-Work Opportunities Act.* Alexandria, VA: American Vocational Association. ERIC Document Reproduction Service No. ED 365 777.

Charner, I. "School to Work Opportunities: Prospects and Challenges." Forthcoming in *Handbook of Sociology of Education for Education Policy.* Norwood, NJ: Ablex Publishing.

Choy, S.P. 1994. "School-to-Work Opportunities: Issues in State and Local Governance." In *School-to-Work: What Does the Research Say About It?* Washington, DC: Office of Research, U.S. Department of Education. ERIC Document Reproduction Service No. ED 371 206.

Choy, S.P., M.N. Alt, and R.R. Henke. June 1994. "Profile of the Target Populations for School-to-Work Transition Initiatives." In *School-to-Work: What Does the Research Say About It?* Washington, DC: Office of Research, U.S. Department of Education. ERIC Document Reproduction Service No. ED 371 206.

Corson, W., and M. Silverberg. 1993. *The School-to-Work/Youth Apprenticeship Demonstration: Preliminary Findings.* Princeton, NJ: Mathematica Policy Research, Inc.

Dykman, A. October 1994. "Let the Reforms Begin." *Vocational Education Journal* 69 (7): 24–26, 66.

Gittleman, M. November 1994. "Partners in Transition." *Training and Development* 48 (11): 32–37.

Halperin, S. 1994. *School to Work: A Larger Vision.* Washington, DC: American Youth Policy Forum.

Hoachlander, G. June 1994. "Industry-Based Education: A New Approach for School-to-Work Transition." In *School-to-Work: What Does the Research Say About It?* Washington, DC: Office of Research, U.S. Department of Education. ERIC Document Reproduction Service No. ED 371 206.

Imel, S. 1995. *School-to-Work Transition: Trends and Issues Alert.* Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education, Center on Education and Training for Employment.

Jobs for the Future. 1994. *Learning That Works: A School-to-Work Briefing Book.* Cambridge, MA: Jobs for the Future.

Kazis, R., with P.E. Barton. 1993. *Improving the Transition from School to Work in the United States.* Cambridge, MA: Jobs for the Future. ERIC Document Reproduction Service No. ED 353 454.

Kerka, S. 1995. *High Performance Work Organizations: Myths and Realities.* Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education, Center on Education and Training for Employment.

Lynn, I., and J. Wills. 1994. *School Lessons, Work Lessons: Recruiting and Sustaining Employer Involvement in School-to-Work Programs.* Washington, DC: Institute for Educational Leadership. ERIC Document Reproduction Service No. ED 372 255.

McNeil, P.W., and C.D. Kulick. 1995. *Employers' Role in School-to-Work Opportunities. Education Reform and School-to-Work Transition Series.* Washington, DC: Academy for Educational Development and National Institute for Work and Learning.

Mendel, R. 1994. *The American School-to-Career Movement: A Background Paper for Policymakers and Foundation Officers.* Washington, DC: American Youth Policy Forum. ERIC Document Reproduction Service No. ED 374 264.

Milgram, D., and K. Watkins. March 1994. *Ensuring Quality School-to-Work Opportunities for Young Women.* A Working Paper Released in Cooperation with the American Youth Policy Forum. Washington, DC: Wider Opportunities for Women. ERIC Document Reproduction Service No. ED 369 907.

National Commission on Excellence in Education. 1983. *A Nation at Risk: The Imperative for Educational Reform.* Washington, DC: National Commission on Excellence in Education. ERIC Document Reproduction Service No. ED 226 006.

National Governors' Association. 1994. *Developing Systems of School-to-Work Transition: A Report on State Progress. Issue Brief.* Washington, DC: National Governors' Association. ERIC Document Reproduction Service No. ED 374 223.

Newmann, F.M., and G.G. Wehlage. April 1993. "Five Standards of Authentic Instruction." *Educational Leadership* 50 (7): 8–12.

Ohio Council on Vocational Education. 1994. *Gathering Momentum! Transition from School to Work.* Westerville: Ohio Council on Vocational Education.

Osterman, P. 1992. "Is There a Problem with the Youth Labor Market and If So, How Should We Fix It?" Unpublished manuscript. Boston: Sloan School of Management, Massachusetts Institute of Technology.

Pauly, E., H. Kopp, and J. Haimson. January 1994. *Home-Grown Lessons: Innovative Programs Linking Work and High School.* New York: Manpower Demonstration Research Corporation. ERIC Document Reproduction Service No. ED 369 939.

Reisner, E.R., and others. 1994. *Using Youth Apprenticeship To Improve the Transition to Work: An Evaluation of System Development in Eight States.* Washington, DC: Council of Chief State School Officers. ERIC Document Reproduction Service No. ED 369 911.

Rogers, A., and others. 1995. *Learning from Experience: A Cross-case Comparison of School-to-Work Transition Reform Initiatives.* Washington, DC: Academy for Educational Development.

Secretary's Commission on Achieving Necessary Skills. 1991. *What Work Requires of Schools: A SCANS Report for America 2000.* Washington, DC: Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor. ERIC Document Reproduction Service No. ED 332 054.

Smith, T.M., and others. 1994. *The Condition of Education, 1994.* Washington, DC: National Center for Education Statistics, Office of Educational Research and Improvement, U.S. Department of Education. ERIC Document Reproduction Service No. ED 371 491.

Southeastern Regional Vision for Education. 1995. *Youth Apprenticeship: A School-to-Work Transition Program.* Tallahassee, FL: Southeastern Regional Vision for Education.

Stern, D., N. Finkelstein, J.R. Stone, III, J. Latting, and C. Dornsife. March 1994. *Research on School-to-Work Transition Programs in the United States.* Berkeley, CA: National Center for Research in Vocational Education. ERIC Document Reproduction Service No. ED 369 923.

Tucker, M. 1995. "The Leadership Challenge: Accommodating Different Perspectives on School to Work." In *Promoting a Dialogue on School-to-Work Transition.* P. Brown, Ed. Washington, DC: Center for Policy Research, National Governors' Association.

William T. Grant Foundation. 1988. *The Forgotten Half: Non-College Youth in America.* Washington, DC: Commission on Work, Family, and Citizenship, William T. Grant Foundation. ERIC Document Reproduction Service No. ED 290 822.

Zemsky, R. 1994. *What Employers Want: Employer Perspectives on Youth, the Youth Labor Market, and Prospects for a National System of Youth Apprenticeship.* EQW Working Paper 22. Philadelphia: National Center on the Educational Quality of the Workforce. ERIC Document Reproduction Service No. ED 372 193.

For a list of public Internet access points to the ERIC database and step-by-step login instructions, send an e-mail message to ericdb@aspensys.com

BEST COPY AVAILABLE

THE ERIC Review

School-to-Work Transition in the K–12 Classroom

by Karen Cicmanec and Carol Boston

Teachers in K–12 classrooms are important community partners in state and local school-to-work initiatives. Indeed, the work of the whole community is showcased when each student finds a successful and satisfying career opportunity following graduation. In school districts across the country, school-to-work programs are transforming classrooms, and K–12 teachers and administrators in those districts are reporting the following changes:

- ***Teachers structure classroom activities to integrate academic skills with skills required for successful employment.*** In schools in which a school-to-work focus is evident, learning activities become more contextualized and academic subjects become more applied. Examples of this shift in educational emphasis include students in English composition and business classes learning to write a business plan and an electronics class learning how timing circuits work by studying the principles of chemistry and physics.

  In Kalamazoo County, Michigan, science teachers discuss, evaluate, and grant credit for projects students complete in the health occupations program. In Tulsa, Oklahoma, curriculum for academic and technical subjects was rewritten for the Craftsmanship 2000 metalworking program to better focus on the connections between the two. Students now take coursework in applied physics and applied mathematics to solve problems they might encounter on the job. English teachers emphasize written and verbal communication.

- ***Teachers and counselors provide information about careers and school-to-work opportunities to parents and students and help them make decisions based on their knowledge of the curriculum and students' interests and aptitudes.*** Starting in ninth grade, students at Roy High School in Roy, Utah, meet one to four times per year with their counselors, teachers, and parents to explore careers, exchange information, and create plans for education and occupation. A career laboratory offers assessment tools and information on labor markets and occupations to students via computer.

- ***Teachers form partnerships with business people, technical workers, and others from the public and private sectors to provide resources and enhance classroom experiences.*** Instructors in the health occupations program in Kalamazoo County, Michigan, team teach with doctors and other medical specialists onsite. At Roosevelt High School in Portland, Oregon, freshmen participate in forums with speakers from local businesses, while freshmen and sophomores "job shadow" to gain an introduction to the world of work before selecting a career pathway in business management, health services, manufacturing, natural resources, human services, or arts and communications.

- ***Teachers broaden and deepen their knowledge of various vocations, collaborating with employers to provide contextual learning activities and to set achievable goals for their students.*** Some teachers in Wisconsin and Oregon participate in paid summer work internships in business, industry, and public service to gain insight into the workplaces awaiting their students. Teachers may also shadow professionals in other occupations or take advantage of professional development retreats and training sessions.

- ***Teachers use new ways to assess student knowledge and skills and to help prepare students to meet state and industry standards.*** At Pasadena Graphic Arts Academy in Pasadena, California, instructors have implemented a project-based approach that approximates the

At the time of this writing, Karen Cicmanec was a project manager with the Education and Training Division at Aspen Systems Corporation in Rockville, Maryland. Carol Boston is the publications coordinator for ACCESS ERIC.

work environment students will encounter in a real job. During each grading period, teams of students collaborate on projects with multiple tasks and deadlines.

- ***School representatives work with others from business, technical and vocational schools, community colleges, universities, nonprofit organizations, and government to develop, implement, and assess school-to-work opportunities for their students.*** The Regional Occupational Program in San Gabriel Valley, California, is a partnership involving local employers, school districts, community colleges, and universities. Also participating are state service agencies, which provide students with employment referral and labor market information, and the National Council on Aging, which helps students find tutors, mentors, and job coaches.
- ***Some schools change the traditional ways they track and place students, experimenting with ungraded classrooms and other grouping alternatives.*** Maine, for instance, is organizing an untracked, self-paced, self-directed "universal high performance education" for all K–10 students.

When school-to-work systems are in place, students will:

- ***See an immediate connection between their schooling and their future educational and occupational choices.*** When students are involved in school-to-work programs, higher levels of engagement and achievement and more realistic understandings of workplace requirements are reported in anecdotal and statistical evidence.
- ***Begin exploring careers in the early grades and have many individualized options for training.*** Central Valley High School in Veradale, Washington, has reorganized its curriculum around six career paths in fields such as business marketing and management, technology in society, and creative and applied arts. Freshmen choose a career path and devise a 5-year course plan to employment. Developing plans for the fifth year—which could include military service, trade school, community college, a baccalaureate program, or employment—helps them set realistic, long-term objectives.
- ***Have a variety of teachers, nontraditional and traditional.*** In Tulsa, Oklahoma, students enrolled in the Craftsmanship 2000 tech prep program are taught by a pool of high school and technology center instructors. Mentors from businesses help students understand the relationship between what they are learning in their technical classes and industrial practice.
- ***Spend more time offsite in training and employment settings.*** Students in Kalamazoo County, Michigan, for example, spend up to 10 hours per week gaining onsite exposure to health care occupations, the hospitality industry, law enforcement and criminal justice, plastics, paper technology, theater work, and automotive technology. Students enrolled in Tulsa's Craftsmanship 2000 program spend 4 hours per day in academic classes and the other 4 on the machine shop floor.
- ***Earn wages and college credits as part of their program.*** In Tulsa, students who are successful in the Craftsmanship 2000 program are guaranteed 25 hours of credit at Tulsa Junior College for their first 2 years of work. In Wisconsin, work-based learning experiences through youth apprenticeship and cooperative education programs lead to an industry-approved skill certificate and technical college credits in areas such as auto technology, electronics, manufacturing, and print and graphic arts.

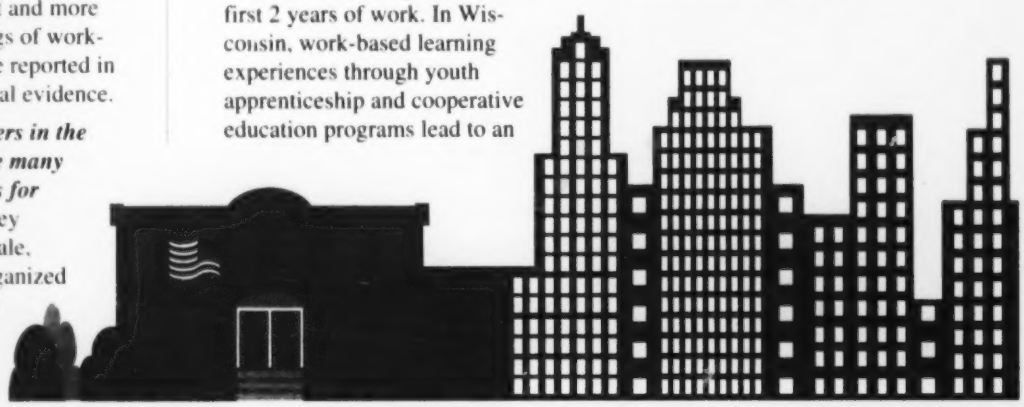
Preparing students for successful employment as adults requires the efforts of the whole community. With the support of educators, parents, businesses, and community organizations, school-to-work programs can change what and how students are taught and how their learning is assessed. Connecting school and life after school motivates students to take greater interest in their education and encourages teachers to pursue professional development opportunities the school-to-work movement is now creating. As students sharpen their focus on the larger issues of career and life choices, teachers will find their role evolving from classroom experts to learning managers who collaborate with students and employers.

Sources

Hollenbeck, K. 1995. *In Their Own Words: Student Perspectives on School-to-Work Opportunities*. Washington, DC: National Institute for Work and Learning, Academy for Educational Development.

Rogers, A., and others. 1995. *Learning from Experience: A Cross-case Comparison of School-to-Work Transition Reform Initiatives*. Washington, DC: National Institute for Work and Learning, Academy for Educational Development.

Weinbaum, A., and A. Rogers. 1995. *Contextual Learning: A Critical Aspect of School-to-Work Transition Programs*. Washington, DC: National Institute for Work and Learning, Academy for Educational Development.



The Tech Prep Option

This article is based on three ERIC-produced resources: Tech Prep *by Bettina A. Lankard, part of the* Myths and Realities *series published by the ERIC Clearinghouse on Adult, Career, and Vocational Education, and two* ERIC Digests *published by the ERIC Clearinghouse for Community Colleges:* Tech Prep/Associate Degree Academic Outcomes *by Carolyn Prager and* Community Colleges as Facilitators of School-To-Work *by Frankie Santos Laanan.*

In *The Neglected Majority* (1985), Dale Parnell maintained that students in the two middle high school quartiles neither prepare for nor aspire to baccalaureate study. Instead, they leave high school without education or training suited to an increasingly sophisticated technological workplace. Parnell conceived of tech prep as an articulated high school/community or technical college program of formalized studies that would reach the "neglected majority" by integrating the 11th through 14th year of occupational-technical curricula. In essence, he proposed making tech prep a new but very different college preparatory track. Blending the liberal and practical arts, it would run parallel to the historic academic track but lead to an associate rather than a baccalaureate degree (Hull and Parnell, 1991; Parnell, 1992).

Tech prep became virtually a national community college mission statement during and after Parnell's tenure as president of the American Association of Community and Junior Colleges (AACJC). Tech prep was also a cornerstone of the Carl D. Perkins Vocational and Applied Technology Act Amendments of 1990, representing the first major federal initiative promoting comprehensive, sustained links between secondary schools and 2-year colleges.

The Perkins Act defines tech prep as a combined secondary and postsecondary program that:

- Leads to a 2-year associate degree or a 2-year certificate.
- Provides technical preparation in at least one field of engineering technology; applied science; mechanical, industrial, or practical art or trade; or agriculture, health, or business.
- Builds student competence in mathematics, science, and communications (including through applied academics) through a sequential course of study.
- Leads to placement in employment.

To encourage the development of tech prep programs, Title III, Part E, of the Perkins Act, called the "Tech-Prep Education Act," authorizes funds to provide planning and demonstration grants to consortia of local education agencies and postsecondary institutions for the development and operation of 4-year tech prep programs leading to a 2-year certificate. These programs are sometimes referred to as "2 + 2 programs" because they link 2 years of secondary school and 2 years of higher education or an apprenticeship program following secondary instruction with a common core of required proficiency in mathematics, science, communications, and technologies designed to lead to an associate degree or certificate in a specific career field (Boesel and others, 1994). (In 1996, federal funding for tech prep will likely be consolidated with youth education and training programs under the pending workforce development block grant proposals.)

Tech Prep in Action

The findings of a survey conducted as part of the National Assessment of Vocational Education (NAVE) indicated that by 1993, about 5,400 out of 11,500 secondary school districts reported some tech prep activities. However, the estimated number of programs becomes much smaller when tech prep programs are defined more restrictively: about 400 secondary programs meet all the Perkins criteria for tech prep outlined in the previous paragraphs and have students participating. The majority of reported tech prep initiatives were just getting started in 1992, and most of these programs enrolled their first students in 1993 and will graduate their first cohorts in 1997 (Boesel, Rahn, and Deich, 1994).

In practice, tech prep consortia take different approaches to defining participation. Some consortia do not view tech prep as a distinct program and do not differentiate between students in tech prep and those in the general student population. Others count students as tech prep participants if they happen to take any course considered fundamental to the tech prep initiative. And other consortia view tech prep as a cohesive program in which students apply for admission, enroll, and participate in a defined set

of activities that set tech prep students apart from other students.

California, Indiana, Michigan, Pennsylvania, Wisconsin, and Texas have consortia involving very large numbers of secondary school districts and postsecondary institutions; however, the model of one local school district and one community college is also very common. About three-quarters of the consortia studied reported some type of support from individual businesses, corporations, industry or trade associations, or labor groups in fiscal year 1993, including help in developing curricula, identifying required competencies, and creating learning activities (Silverberg and Hershey, 1995).

Articulation between secondary and postsecondary institutions is essential to any tech prep program to ensure systematic and coordinated curricula across institutions that will lead students to a 2-year associate degree, a 2-year certificate, or a 4-year bachelor's degree without duplication of effort or loss of credit. However, if employment is the desired outcome of tech prep education, secondary and postsecondary educators must also form partnerships with business, industry, and labor to ensure that what is being taught in school is relevant in the workplace.

Tech prep consortia most commonly define career areas in business, engineering and technology, and health and human services. The broad cluster of business, office skills, and marketing reported the largest enrollment of students in fall 1993. In general, job placement is not yet a major focus of career development; the workplace experiences offered as part of tech prep programs tend to be "low intensity" and optional (for example, worksite visits), though more structured experiences will likely become more common as the School-to-Work Opportunities Act is implemented (Silverberg and Hershey, 1995).

Recently, community colleges have provided an essential component of traditional apprenticeships by offering the theoretical underpinning of apprenticeship training in their institutions while businesses provide job-specific training at the worksite. Most successful models are supported by a corporation, trade unions, and a community college. In such an instance, the state and federal apprenticeship agencies and the state department of education must approve the apprenticeship program and the coursework provided (Boesel and others, 1994).

An example of private sector apprenticeship training within the community college is reflected in the partnership model established in Newport News, Virginia, between Newport News Shipbuilding and Drydock Company and Thomas Nelson Community College. For this program, the college provides onsite trade theory classes, advanced technical training, and general education courses as part of the company's prestigious 4-year apprenticeship program. In another occupational area, the International Brotherhood of Electrical Workers, Local #3 in Flushing, New York, and the International Union of Operating Engineers—two construction industry unions—are working with contractors and area community colleges to offer 3- and 4-year apprenticeship programs leading to associate degrees (Stern and others, 1994).

"Most successful models are supported by a corporation, trade unions, and a community college."

Applied Academics

Applied academics courses emphasizing contextual learning in mathematics, science, and communications are at the heart of the tech prep curriculum. Applied academics provide the foundation for technical careers that require individuals to adapt to an ever-changing technological workplace. The materials and instructional techniques used in this approach give students practical, hands-on ways to learn and apply concepts. Pedrotti and Parks (1991), like other advocates of tech prep, maintain that "hand skill" and "head skill" learning reinforce each other and promote conceptual understanding transferable to new situations.

According to these authors, the optimal academic portion of the high school tech prep curriculum includes 2 years of principles of technology (applied physics) or another applied science, 2 years of applied mathematics, and a course in applied communications. Principles of technology allocates about 50 percent of class time to realistic problem solving in laboratory contexts. Applied mathematics offers many hands-on laboratory activities stressing data gathering and analysis. The applied communications course teaches English language skills relative to the workplace.

Secondary educators often use applied academic materials from commercial vendors, such as the Center for Occupational Research and Development (CORD) and the Agency for Instructional Technology (AIT). Indeed, between 1990 and 1993 alone, 29 percent of regular school districts and 55 percent of vocational districts purchased "Principles of Technology," the CORD/AIT applied physics program. State universities in at least 29 states are beginning to recognize and accept some of these applied academic courses for credit toward university admission.

Tech prep requires not only new courses and a sequenced core curriculum, but courses that take into account the learning styles of the majority of students, incorporating concepts like that of contextual learning. According to Hull (1993), contextual learning "occurs only when students process new information or knowledge in such a way that it makes sense to them in their frame of reference (their own inner world of memory, experience, and response)" (p. 41). Thus, the applied academics approach to learning—which involves the teaching of solid academic content by means of hands-on and vocational applications—allows students to learn in the context of life experiences, building on what they already know and applying knowledge in exploration, discovery, and invention. One of the goals of applied academic curriculum is that it should enable students to transfer knowledge from academic content to vocational applications and from school to the workplace.

Student Outcomes

According to the National Center for Research in Vocational Education (NCRVE), tech prep should be grounded in an integrated and authentic core curriculum, articulate secondary and postsecondary education, be highly relevant, focus on outcomes and increased student performance, provide an accessible and viable option for all students, and be implemented with a highly collaborative approach (Bragg and others, 1994).

In a review of 10 studies included in NAVE that linked student performance and participation in applied mathematics, applied communications, and principles of technology courses, Stasz notes that teachers and students generally held positive views of the courses and had increased test scores from the beginning to the end of the courses. In one of the better designed studies, students in the applied classes showed a greater increase in test scores than did the comparison students in "regular" mathematics. In another study, students in the applied class outperformed those in "general" mathematics, making about the same gains as a comparison group of students in Algebra 1. More recent studies suggest that a typical two-course applied mathematics sequence is roughly equivalent to Algebra 1. The last of the 10 studies reviewed by Stasz suggested that, after controlling for differences in general achievement as measured by other parts of the test, Principles of Technology students did better on the science subtest of the Stanford Achievement Test than did chemistry and biology students (Boesel, Rahn, and Deich, 1994).

> ***"The realities of the modern workplace require that employees practice lifelong learning."***

According to its literature, tech prep is a win-win alternative to the college preparatory/baccalaureate degree course of study. It is deemed to improve academic performance, high school graduation rates, and college attendance at the associate degree level. Given that the program was established recently, however, tracking its effectiveness in postsecondary enrollment and employment is difficult (Bryant, 1992; Silverberg and Hershey, 1995). Preliminary data from the evaluation study funded by the Perkins Act found that of 62 consortia that could track postsecondary entry of spring 1993 high school graduates, slightly fewer than one-half of the tech prep students went on to enroll in postsecondary education, with 68 percent entering 2-year institutions and 21 percent entering 4-year colleges.

A survey of more than 400 local tech prep coordinators conducted in 1993 yielded a high level of consensus regarding student outcomes. According to the coordinators, participating in tech prep enabled students to improve in several areas related to academic and employability skills and matriculation from high school to college (Bragg, Layton, and Hammons, 1994).

Tech Prep Revisited

Tech prep education is one of the programs that can serve as a foundation for building a school-to-work system, particularly if it is available to all students, includes strong career guidance and counseling, and incorporates industry standards. Employers also need to be encouraged to participate in tech prep, and educators need professional development in applied academics (U.S. Department of Education, 1994).

Tech prep, like the larger subject of school-to-work transition, sparks critical discussion about the purposes of education. Can community colleges focus on both preparing students for occupational associate degrees and providing them with the credentials to transfer to a 4-year institution? How can community colleges best enhance the technical skills of students with proven academic backgrounds while also teaching remedial skills to students from disadvantaged backgrounds? How closely should community colleges work with local business and industry?

The realities of the modern workplace require that employees practice lifelong learning. Higher education and secondary education will need to work as partners in developing a career ladder approach that enables workers to obtain the level of education they need to remain employed and productive throughout life. Toward this end, NCRVE reports that several tech prep models are emerging:

- *Pre-tech prep*, which encompasses all 4 years of high school plus 2 years of postsecondary tech prep.

- *Adult tech prep*, which is designed for adults who are enrolled in 2-year colleges but who lack adequate secondary preparation.
- *Integrated tech prep*, in which delivery of academic and vocational education is organized around broad career clusters.
- *Work-based tech prep*, in which the workplace rather than the classroom is used for student learning.
- *Tech prep baccalaureate degree*, which includes 4 rather than the conventional 2 years of postsecondary tech prep (Bragg, 1994).

Local coordinators see several obstacles to effective tech prep implementation, particularly negative attitudes toward vocational education and tech prep and a lack of staff, time, and money for tech prep at the secondary level (Silverberg and Hershey, 1995). Other obstacles include the failure of some 4-year colleges and universities to award college credit for applied academic or other tech prep courses and a lack of general awareness about the program (Bragg, Layton, and Hammons, 1994).

The challenges of the 21st century require that postsecondary institutions work in concert with secondary education, employers, labor, and community organizations. An educated, highly skilled, and efficient workforce benefits our economic system, our workforce, and ultimately, our citizenry.

References

Boesel, D., M. Rahn, and S. Deich. 1994. *National Assessment of Vocational Education. Final Report to Congress. Volume III. Program Improvement: Educational Reform.* Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education. ERIC Document Reproduction Service No. ED 371 193.

Bragg, Debra D., James Layton, and F. Hammons. 1994. "Tech Prep Implementation in the United States: Promising Trends and Lingering Challenges." Berkeley, CA: National Center for Research in Vocational Education. ERIC Document Reproduction Service No. ED 374 336.

Bragg, Debra D. June 1994. "Emerging Tech Prep Models: Promising Approaches to Educational Reform." *CenterFocus* No. 5. Berkeley, CA: National Center for Research in Vocational Education. ERIC Document Reproduction Service No. ED 371 142.

Bragg, Debra D., and others. 1994. *Building a Preferred Future with Tech Prep Systems.* Berkeley, CA: National Center for Research in Vocational Education. ERIC Document Reproduction Service No. ED 375 297.

Hull, Dan. 1993. *Opening Minds, Opening Doors: The Rebirth of American Education.* Waco, TX: Center for Occupational Research and Development.

Hull, Dan, and Dale Parnell, compilers. 1991. *Tech Prep Associate Degree: A Win/Win Experience.* Waco, TX: Center for Occupational Research and Development. ERIC Document Reproduction Service No. ED 331 539.

Parnell, Dale. 1992. "Every Student a Winner: How Tech Prep Can Help Students Achieve Career Success." *Vocational Education Journal* 67 (4): 24–26, 52.

Parnell, Dale. 1985. *The Neglected Majority.* Washington, DC: The Community College Press. ERIC Document Reproduction Service No. ED 260 741.

Pedrotti, L., and D. Parks. 1991. "A Solid Foundation: The Role of Applied Academics." In Dan Hull and Dale Parnell, compilers, *Tech Prep Associate Degree: A Win/Win Experience.* Waco, TX: Center for Occupational Research and Development. ERIC Document Reproduction Service No. ED 331 539.

Silverberg, M., and A. Hershey. 1995. *The Emergence of Tech-Prep at the State and Local Levels.* Princeton, NJ: Mathematica Policy Research, Inc.

Stern, David, and others. 1994. *Research on School-to-Work Transition Programs in the United States.* Berkeley, CA: National Center for Research in Vocational Education. ERIC Document Reproduction Service No. ED 369 923.

U.S. Department of Education. 1994. *Tech Prep and School-to-Work Opportunities Information Bulletin.* Washington, DC: U.S. Department of Education.

Accessing ERIC Digests

ERIC Digests, published by ERIC's 16 subject-specific clearinghouses, summarize recent research findings on trends and issues in education. Paper copies of ERIC Digests are available free or for a nominal shipping fee from the various ERIC Clearinghouses (see directory on inside back cover). The full text of ERIC Digests may also be searched and downloaded from various online and CD-ROM vendors and the Internet. Call **1–800–LET–ERIC** (538–3742) for more information about accessing the ERIC Digests.

Federal Initiatives Supporting School-to-Work Transition

President Clinton signed the School-to-Work Opportunities Act (STWOA) in May 1994. STWOA, jointly administered by the U.S. Departments of Education and Labor, provides seed money to states and to local communities to bring together partnerships of employers, educators, and other stakeholders to build school-to-work systems that prepare young people for postsecondary education and for high-skill, high-wage jobs. STWOA does not create a federal program, but rather a national framework within which states can put together school-to-work systems that are part of comprehensive education reform, integrating high academic and occupational standards.

STWOA and the Goals 2000: Educate America Act, which provides a framework for standards-based systemic education reform, are companion pieces of legislation, to be implemented hand in hand. Indeed, the Goals 2000 Act calls for states to coordinate school-to-work programs with their school reform efforts. State improvement plans may, for example, include a description of how secondary schools will be modified to provide career guidance, the integration of academic and vocational education, and work-based learning.

Goals 2000 also authorized the creation of a National Skill Standards Board to identify broad occupational clusters and to create a system of standards, assessment, and certification for related occupational skills. The skill certificates are expected to be industry-recognized, portable credentials. The U.S. Departments of Labor and Education have thus far funded pilot projects to develop skill standards in 22 industries, including automotive training, health care, and electronics.

According to the STWOA legislation, school-to-work systems should feature:

School-based learning, encompassing a program tied to challenging academic and skill standards established by the state; integration of academic and vocational learning; career exploration for students beginning no later than 7th grade; opportunities for students to select career majors by 11th grade; and options such as tech prep for postsecondary training.

Work-based learning, including a structured program of job training and paid work experiences relevant to students' career majors and leading to an industry-recognized skill certificate.

Connecting activities, linking the classroom and the workplace and coordinating work- and school-based learning components through such means as offering training and technical assistance to employers and educators, recruiting business partners, and offering counseling and placement services to individual students.

Under STWOA, development funding totaling $15 million was awarded to all 50 states, the District of Columbia, and Puerto Rico to assist them in planning and developing comprehensive, statewide systems for school-to-work opportunities. States were then eligible to apply for competitive implementation grants. The initial round of implementation grants, $43 million, was given to eight states (Kentucky, Maine, Massachusetts, Michigan, New Jersey, New York, Oregon, and Wisconsin) to concentrate the funding's impact. These states, which have received $87 million in second-year funding, were identified as furthest along in developing school-to-work systems, and they have become laboratories for other states.

An additional 19 states have been awarded nearly $74 million in state implementation funding this year: Alaska, Arizona, Colorado, Florida, Hawaii, Idaho, Indiana, Iowa, Maryland, Nebraska, New Hampshire, North Carolina, Ohio, Oklahoma, Pennsylvania, Utah, Vermont, Washington, and West Virginia. All states are expected to receive implementation grants by 1997. The legislation ensures that significant portions of implementation funding pass through to the local level (70 percent in the first year of implementation, 80 percent in the second, and 90 percent in the third).

In August 1994, fifteen 5-year grants totaling $10 million were awarded as part of a first wave of system building on the local level. Another 21 grants totaling $10 million were awarded in November 1994 for 5-year local

partnerships in high-poverty urban and rural areas in which at least 20 percent of residents under the age of 22 live in poverty. In the summer of 1995, nearly $600,000 was awarded to nine school-to-work partnerships serving Native American youth.

At the time of this writing, Congress is considering legislation to consolidate more than 100 vocational education, adult basic education, and job training programs into block grants to state governments. Several states intend to incorporate existing Job Training Partnership Act (JTPA) programs and youth apprenticeship projects funded by the Department of Labor into their school-to-work systems. JTPA, the largest federal job training initiative, supports year-round programs for in-school and out-of-school youth.

The federal government has committed to providing technical assistance to states and local districts as they plan and implement their school-to-work systems. The U.S. Departments of Education and Labor jointly administer the National School-to-Work Office, which has opened a learning and information center to broker technical assistance for STWOA grantees, support system building, and synthesize and disseminate information. For more information, please contact:

School-to-Work Learning and Information Center
400 Virginia Avenue SW, Suite 210
Washington, DC 20024
1–800–251–7236
E-mail: STW-lc@ed.gov
URL: http://www.stw.ed.gov

Sources

School-to-Work Opportunities Act of 1994. U.S. Public Law 103–239. 103d Congress. May 4, 1994.

U.S. Department of Education. 1994. *School-to-Work Opportunities: Common Questions, with Answers*. Washington, DC: U.S. Department of Education.

A Sampling of Electronic Resources on School-to-Work Transition

The following Gopher and Web sites host useful information and provide links to additional school-to-work sites on the national, state, and local levels.

ERIC Clearinghouse on Adult, Career, and Vocational Education
URL: http://www.osu.edu/units/education/cete/ericacve/index.html
E-mail: ericacve@magnus.acs.ohio-state.edu

National Center for Research in Vocational Education
URL: http://vocserve.berkeley.edu
Telnet: vocserve.berkeley.edu
Bulletin Board: 510–643–6793

North Central Regional Educational Laboratory's Pathways to School Improvement
URL: http://www.ncrel.org/ncrel/sdrs/areas/sw0cont.htm

STW Learning and Information Center
URL: http://www.stw.ed.gov
E-mail: STW-lc@ed.gov

U.S. Department of Education
URL: http://www.ed.gov
Gopher: gopher.ed.gov, then select School-to-Work, Vocational and Adult Education (OVAE)

U.S. Department of Labor
URL: http://lcweb.loc.gov/global/executive/labor.html

Two electronic mailing lists that deal with STW issues are S2WTP and STWNet. If you have an Internet e-mail account, you can subscribe by sending a one-line subscription message to the subscription addresses listed below.

STWTP (School-to-Work/Tech Prep)
Subscription address:
majordomo@cccins.cccneb.edu
Subscription message: *subscribe s2wtp*
Help: Send e-mail to Kevin Miller at *milatec@cccadm.cccneb.edu*

STWNet (School-to-Work Net)
Subscription address:
majordomo@confer.edc.org
Subscription message: *subscribe stwnet*
Help: Send e-mail to Joyce Malyn-Smith at *joycem@edc.org*

Selected School-to-Work Transition Resource Organizations

Academy for Educational Development (AED)
1875 Connecticut Avenue NW,
Suite 900
Washington, DC 20009
202–884–8000
E-mail: admindc@aed.org

AED programs focus on improving quality and equity in basic education, forging school-community partnerships, and strengthening the relationship between education and employment. Four units carry out the work. The National Institute for Work and Learning (NIWL) promotes active collaboration among the institutions of work, learning, and community to improve education-work relationships. NIWL's work includes the provision of technical assistance to states and communities; research, analysis, and reports; needs assessments; case studies; program evaluations; and the convening of conferences on key policy issues. NIWL recently completed a 4-year study of education reform and school-to-work transition for the U.S. Department of Education's Office of Educational Research and Improvement. AED's School and Community Services unit conducts projects that address the changing needs of both in- and out-of-school youth, focusing on low-income, minority, and educationally disadvantaged young people. The Center for Youth Development and Policy Research seeks to advance a vision of youth development that specifies outcomes and strategies, thereby establishing standards and expectations for youth and their communities. The Disabilities Studies and Services Center was established to improve the lives of children and youth with disabilities and is a member of the National Transition Alliance.

American Vocational Association (AVA)
1410 King Street
Alexandria, VA 22314
1–800–826–9972
703–683–3111

AVA serves teachers, supervisors, administrators, and others interested in the development and improvement of vocational, technical, and practical arts education within secondary, postsecondary, and adult vocational education. AVA provides information on cooperative education and vocational education for special population groups; works with government agencies such as the Bureau of Apprenticeship in the U.S. Department of Labor, the Office of Vocational Rehabilitation in the U.S. Department of Health and Human Services, the Office of Vocational and Adult Education in the U.S. Department of Education, and the Veterans Administration; and produces a newspaper, a newsletter, and a journal.

American Youth Policy Forum Institute for Educational Leadership
1001 Connecticut Avenue NW,
Suite 719
Washington, DC 20036–5541
202–775–9731

The Forum provides researchers, policy makers, and their aides with information and experiences helpful to the development of an effective youth education, training, and transition-to-employment system encompassing apprenticeship, youth service, and other experience-based learning. It offers publications and training seminars and site visits to relevant programs.

Center for Human Resources Clearinghouse
Brandeis University
60 Turner Street
Waltham, MA 02154
1–800–343–4705

The clearinghouse provides information on youth employment and education, dropout prevention, competency-based education, case management, assessment, and school-business-community partnerships. It disseminates information to the public; provides training, research, and technical assistance; offers meetings, conferences, seminars, and workshops; and produces publications such as reports, newsletters, and articles. The center is sponsored by the U.S. Department of Labor, Job Training Partnership Act, and various private foundations and corporations.

Center for Learning and Competitiveness (CLC)
University of Maryland
School of Public Affairs
College Park, MD 20742
301–405–6344

Selected School-to-Work Transition Resource Organizations

CLC, founded in 1992 with a grant from the German Marshall Fund of the United States, works with American educators and policy makers to apply the lessons from international education and training systems to workforce preparation policies and systems in this country. CLC arranges international study programs, leads conferences and seminars, provides consulting services to state governments and policy organizations, and publishes reports.

Center for Workforce Development Institute for Educational Leadership (IEL)
1001 Connecticut Avenue NW, Suite 310
Washington, DC 20036
202–822–8405
E-mail: willsj@iel.org

IEL's Center for Workforce Development focuses on the development and improvement of learning systems in the United States and on promoting closer working relationships between the education system and employment and training programs. The Center also supports new leadership development opportunities for professionals involved in teaching and training activities. Policy areas of interest include improving secondary education, ensuring the effectiveness of "second chance" programs, strengthening the information and services available to young people in the transition from school to work, increasing and improving applied learning opportunities, redesigning labor market services such as assessments and job search services, and expanding the network of private-sector industries designing work-based training programs and curricula.

Center for Workforce Preparation
1615 H Street NW
Washington, DC 20062–2000
202–463–5525

Affiliated with the U.S. Chamber of Commerce, this center helps chambers of commerce and small businesses participate in local education and training reform programs and provides timely, action-oriented materials. Write for a publications list.

Center on Education and Training for Employment (CETE)
The Ohio State University
1900 Kenny Road
Columbus, OH 43210–1090
1–800–848–4815

This center strives to increase the ability of diverse agencies, institutions, and organizations to solve education problems in relation to individual career planning, preparation, and progression. CETE conducts occupational analysis and staff training programs; evaluates programs and agencies and provides technical assistance; sponsors professional development workshops; researches identified problems or needs; and disseminates books, newsletters, monographs, research reports, and videos. It also develops databases, information systems, and occupational curricula; maintains a library of more than 55,000 volumes on research and development in vocational education; and hosts the ERIC Clearinghouse on Adult, Career, and Vocational Education.

Center on Education and Work
School of Education
University of Wisconsin–Madison
964 Educational Sciences Building
1025 West Johnson Street
Madison, WI 53706
1–800–446–0399
608–263–2929
E-mail: ewmail@soemadison.wisc.edu
URL: http://www.cew.wisc.edu

Through collaborative, interdisciplinary research and developmental programs, the Center on Education and Work provides leadership in identifying and responding to issues affecting the connections among education, work, community, and the family. The Center distributes newsletters, technical reports, and instructional and career resources and provides training seminars and research in the areas of career development, educational research, special education, program development, and vocational education.

Cooperative Education Association, Inc.
8640 Guilford Road, Suite 215
Columbia, MD 21046
410–290–3666

This association works to develop and expand work-integrated learning and education programs through partnerships with policy makers, publications, and public relations initiatives.

Cornell Youth and Work Program
College of Human Ecology
Cornell University
Ithaca, NY 14853–4401
607–255–8394
E-mail: mlk14@cornell.edu

The Cornell Youth and Work Program sponsors research, development, system design, and dissemination activities to help young people find and follow productive career paths. Those activities focus on project-based learning, coaching, and mentoring at work, and advising systems that incorporate school, work, and family. For the past 5 years the program has codirected a youth demonstration project that has aided in the development of STW programs and legislation. A variety of publications and video materials discussing emerging school-to-work issues is available.

Council of Chief State School Officers (CCSSO)
One Massachusetts Avenue NW, Suite 700
Washington, DC 20001–1431
202–408–5505

CCSSO supports state education departments in their efforts to develop and implement systemic education reform plans, including school-to-work systems. In 1992, the U.S. Department of Labor and CCSSO awarded grants to eight states—California, Iowa, Maine, Michigan, Oregon, Pennsylvania, West Virginia, and Wisconsin—

Selected School-to-Work Transition Resource Organizations

to build youth apprenticeship systems. These state efforts were then evaluated to determine barriers to system building.

ERIC Clearinghouse on Adult, Career, and Vocational Education (ERIC/ACVE)
The Ohio State University
1900 Kenny Road
Columbus, OH 43210–1090
1–800–848–4815
614–292–4353
E-mail: ericacve@magnus.acs.ohio-state.edu
URL: http://www.osu.edu/units/education/cete/ericacve/index.html

ERIC/ACVE, one of 16 clearinghouses sponsored by the U.S. Department of Education's Office of Educational Research and Improvement, collects, abstracts, indexes, and disseminates education information to the general public. Topics covered pertain to adult, continuing, career, literacy, vocational, and technical education. ERIC/ACVE provides reference and referral services, online searches, search strategy consultation, technical assistance, training, seminars, and workshops. It also produces information analysis products and distributes complimentary ERIC products such as Digests, newsletters, and brochures.

Human Resources Development Institute
AFL-CIO Education Department
815 Sixteenth Street NW, Suite 405
Washington, DC 20006
202–638–3912

This education and training division of AFL-CIO works to ensure that labor is represented in federally funded employment and training programs such as the Job Training Partnership Act and in state and local school-to-work transition systems. It also sponsors demonstration programs to improve workers' skills and workplace literacy.

Institute on Education and the Economy (IEE)
Teachers College, Box 174
Columbia University
525 West 120th Street
New York, NY 10027
212–678–3091
E-mail: iee@columbia.edu

IEE conducts research in two broad areas: education reform in relation to work and work reform with an emphasis on learning on the job. The Institute is studying employer involvement in school-to-work programs and working on several projects related to the development and implementation of industry-based skill standards. Write to request a free subscription to the *Insider* newsletter.

Jobs for America's Graduates (JAG)
1729 King Street, Suite 200
Alexandria, VA 22314
703–684–9479
E-mail: imdg@delphi.com

JAG develops youth employment training models for state education programs and high schools, establishes local boards to ensure that participants properly implement the models, operates dropout prevention programs, and offers an annual training seminar. JAG programs are targeted for at-risk and disadvantaged high school students who have limited work experience and do not plan to attend college. These students participate in career exploration and work experiences in occupational clusters linked to the demands of the local labor market.

Jobs for the Future (JFF)
One Bowdoin Square, 11th Floor
Boston, MA 02114
617–742–5995

JFF is a nonprofit organization that conducts research, provides technical assistance, and proposes policy innovations on the interrelated issues of work and learning. JFF aims to encourage policies and practices that prepare all citizens for effective transitions between learning and work. JFF identifies emerging trends in the changing nature of work and analyzes their implications; develops and field tests new models such as Benchmark Communities; identifies, convenes, assists, and evaluates exemplary innovators; and creates new partnerships between public and private institutions. JFF builds public awareness by serving as a source of expertise and information for employers, unions, educators, the media, political and civic leaders, researchers, and the general public and advises state and national policy makers on the development of policies, systems, and leadership to support more effective, lifelong transitions between work and learning in a changing economy.

National Alliance of Business (NAB)
1201 New York Avenue NW, Suite 700
Washington, DC 20005–3917
1–800–787–2870
E-mail: info@nab.com

NAB works to solve the problem of unemployment and promote American economic competitiveness by involving businesses in education and training programs that serve individuals facing barriers to employment. It maintains an electronic database with more than 500 model job training programs; offers training and technical assistance to state and local job training programs; and produces monograph series, reports, catalogs, surveys, manuals, and guides. NAB seeks to develop a national consensus on strategies to aid disadvantaged youth.

National Association of Partners in Education (NAPE)
901 North Pitt Street, Suite 320
Alexandria, VA 22314
703–836–4880

NAPE is a membership organization representing schools, businesses, community groups, educators, and individuals who work together as partners to enhance the education of children. Materials and training on

Selected School-to-Work Transition Resource Organizations

school-business-community relationships, volunteer programs, and partnership initiatives are available.

National Center for Research in Vocational Education (NCRVE)
University of California at Berkeley
2150 Shattuck Avenue, Suite 1250
Berkeley, CA 94720–1674
1–800–762–4093
510–642–4004
URL: http://vocserve.berkeley.edu

This national center, funded by the U.S. Department of Education, conducts a program of research and development in work-related education. NCRVE promotes a new concept of vocational education as preparing all individuals for lasting and rewarding employment and lifelong learning. NCRVE also addresses issues related to organizational change in response to shifts in the economy. Contact the center to receive free research summaries and information about the center's Internet site, VOCSERVE.

National Center on Education and the Economy
700 Eleventh Street NW, Suite 750
Washington, DC 20001
202–783–3668
URL: http://www.ncee.org/

This center seeks to make people aware of the link between economic growth and the abilities of the people who contribute to that growth. It develops and provides technical assistance to educational, training, and retraining programs; sponsors the National Alliance for Restructuring Education; conducts studies of the American workforce; and offers books and papers.

National Center on the Educational Quality of the Workforce
University of Pennsylvania
Institute for Research on Higher Education
4200 Pine Street, Room 5A
Philadelphia, PA 19104–4090
1–800–437–9799
E-mail: eqw-requests@irhe.upenn.edu

This center, sponsored by the U.S. Department of Education, Office of Educational Research and Improvement, conducts basic and applied research and policy analysis on the renewal of American economic competitiveness through leveraged investments in the quality of the nation's workforce. It disseminates research findings and policy recommendations to educators, administrators, researchers, business representatives, and policy makers.

National Clearinghouse for Information on Business/Industry Involvement in Education
National Association for Industry-Education Cooperation
235 Hendricks Boulevard
Buffalo, NY 14226–3304
716–834–7047

This clearinghouse, serving education agencies, teachers, educators, students, business personnel, and disabled individuals, fosters industry-education cooperation in the United States and Canada in the areas of school improvement, preparation for work through career education, and human resource and economic development. It provides technical assistance to schools implementing industry-education councils or alliances, as well as career education, staff and curriculum development, and entrepreneurship education. The clearinghouse also helps improve educational management, assists in furthering the use of industry-sponsored materials in the schools, and produces newsletters, handbooks, brochures, manuals, guides, and audiovisuals.

National Governors' Association
444 North Capitol Street NW
Washington, DC 20001–1572
202–624–5300

This association serves as a vehicle for governors to influence the development and implementation of national policy and apply creative leadership to state problems. It keeps federal agencies informed of the needs of states; serves as a network for sharing information on innovative programs; provides technical assistance to governors on a wide range of issues, including school to work; undertakes demonstration projects; and provides research on policy issues.

National Society for Experiential Education
3509 Haworth Drive, Suite 207
Raleigh, NC 27609–7229
919–787–3263

The National Society for Experiential Education supports the use of learning through experience for intellectual development, civic and social responsibility, career exploration, career education, cross-cultural and global awareness, and ethical development. Its audience includes educators, students, administrators, researchers, education agencies, and the media. The organization offers technical assistance to establish and operate internship programs; maintains a library of information on experiential and service learning; and offers conferences, books, newsletters, directories, and monographs.

National Transition Alliance for Youth with Disabilities
University of Illinois
113 Children's Research Center
51 Gerty Drive
Champaign, IL 61820
217–333–2325

The Alliance promotes the transition of youth with disabilities, including those with severe disabilities, toward desired post-school outcomes, including gainful employment, postsecondary education and training, and independent living. The project provides technical assistance to personnel responsible for the provision of transition services, particularly personnel who plan and implement School-to-Work Opportunity Systems as well as other transition projects for youth with disabilities.

Selected School-to-Work Transition Resource Organizations

National Youth Employment Coalition
1001 Connecticut Avenue NW, Suite 719
Washington, DC 20036–5541
202–459–1064

Representing policy groups, community-based organizations, and the business sector, this coalition advocates on behalf of young workers. The coalition conducts studies, makes policy recommendations, and offers publications related to school-to-work transition issues.

Northwest Regional Educational Laboratory (NWREL) Education and Work Program
101 Southwest Main Street, Suite 500
Portland, OR 97204–3597
1–800–547–6339
E-mail: mcclurel@nwrel.org
URL: http://www.nwrel.org/edwork/

This NWREL program has developed and supported school-to-work activities in such areas as academic-vocational integration, applied academics, school-business-industry partnerships, and rural and urban school-to-work transition both in the Northwest and nationwide. It helps clients customize and evaluate model programs and provides clients with partnership training, technical assistance, and publications.

Public/Private Ventures (P/PV)
2000 Market Street, Suite 900
Philadelphia, PA 19103
215–557–4400

This not-for-profit corporation designs, manages, and evaluates social policy initiatives to help young people, especially those who are hard to serve, become productively employed and self-sufficient. P/PV works with schools, employment and training organizations, community-based organizations, foundations, business, and government to find more effective approaches to education, training, and employment. P/PV's "Changing Communities for Youth Development" program enlists communities to build comprehensive strategies that serve youth middle-school age and over. P/PV is also undertaking a strategy to build on entry-level jobs young people currently hold, changing the work experience into an educational experience through "WorkPlus" demonstration sites in cities such as Boston and Cleveland.

STW Learning and Information Center
400 Virginia Avenue SW, Suite 210
Washington, DC 20024
1–800–251–7236
E-mail: STW-lc@ed.gov
URL: http://www.stw.ed.gov

The Academy for Educational Development, in conjunction with Defense Technology Incorporated, another contractor, operates this recently established center, which will assist states and local partnerships and their stakeholders in establishing statewide school-to-work systems. It will collect and disseminate information on such topics as labor market analysis, skills certificates and skills standards, successful school-to-work programs and curricula, and the recruitment of employers to provide work-based learning opportunities. The Learning Center will also broker technical assistance to states and localities through a resource pool focused on staff development in such areas as recruiting employers and establishing school-sponsored enterprises.

WAVE, Inc.
501 School Street SW, Suite 600
Washington, DC 20024
1–800–274–2005
E-mail: wave4kids@aol.com

WAVE, Inc., promotes competency-based, experiential, six-level secondary and three-level middle grades curricula designed to teach intra/interpersonal skill development, career awareness, and job preparation to dropouts and students between 14 and 21 at risk of dropping out. WAVE also conducts intensive off- and onsite training and technical assistance for comprehensive staff development.

Youth Policy Institute
1333 Green Court NW
Washington, DC 20005–4103
202–638–2144
E-mail: corpsnet@mnsin.com

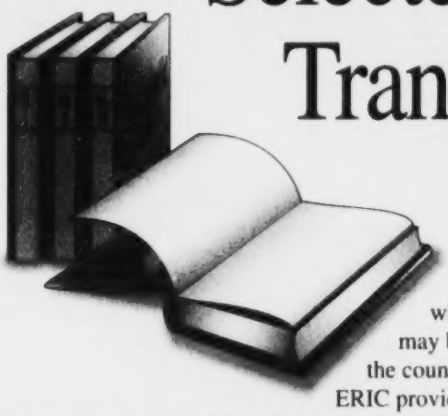
Youth Policy Institute monitors federal youth and family policy and produces comprehensive updates for youth-serving organizations, family-serving organizations, and individuals interested in the development of policy in the administration, Congress, and public interest groups. It encourages students to investigate and report on how such policy initiatives affect their own communities; provides youth and family advocates with an information base for comparing policy initiatives to present and past policy; offers internships to college students and recent graduates to learn to monitor, analyze, and report on policy in areas affecting families and youth; and produces magazines, journals, and a newsletter.

Youth Service America
1101 Fifteenth Street NW, Suite 200
Washington, DC 20005
202–296–2992

Youth Service America promotes and develops youth service programs in schools, colleges, and community-based agencies. It organizes and mobilizes youth for community services and sponsors these activities and service groups: the annual National Youth Service Day, Working Group on Youth Service Policy, Youth Volunteer Corps of America Replication Project, and Youth Service Leadership Institute.

- Compiled by Edward Pearce, ACCESS ERIC

Selected School-to-Work Transition Readings



The following titles cover a range of school-to-work issues. Ordering information is included at the end of each entry. In addition, items for which ERIC document numbers (ED followed by six digits) are provided may be read on microfiche at no charge at more than 1,000 locations across the country; call 1–800–LET–ERIC (538–3742) for the location of the nearest ERIC provider. You may also purchase most ERIC documents in paper copy or microfiche from the ERIC Document Reproduction Service at 1–800–443–ERIC (3742).

The American School-to-Career Movement: A Background Paper for Policymakers and Foundation Officers
R. Mendel, 1994; ED 374 264

This paper analyzes the school-to-career movement, examining its rationale, history, and lessons from overseas as well as discussing issues surrounding the school-to-work movement in the United States. Free. Lilly Endowment, Inc., 2801 North Meridian Street, Indianapolis, IN 46208; 317–924–5471.

AVA Guide to the School-to-Work Opportunities Act
M. Brustein and M. Mahler, 1994

Following an overview describing the need for the School-to-Work Opportunities Act, this guide from the American Vocational Association presents a detailed discussion and analysis of the Act. $49.95 members; $59.95 nonmembers. American Vocational Association, 1410 King Street, Alexandria, VA 22314; 1–800–826–9972.

"Bridging the Gap Between School and Work"
B. Filipczak, December 1993

This article from *Training* (Vol. 30, No. 12, pp. 44–47) discusses success factors in Boston's Project ProTech, a private industry council youth apprenticeship program that places high school students in hospitals to explore and train for health care occupations. Check your library or purchase a copy from UMI InfoStore (formerly UMI and Information Store), 500 Sansome Street, Suite 400, San Francisco, CA 94111–3219; 1–800–248–0360.

Building a System To Connect School and Employment
Council of Chief State School Officers and American Youth Policy Forum, 1994; ED 368 938

This publication reflects the concerns and the counsel of educators, practitioners, researchers, policy makers, labor officials, business organizations, and federal and state governments about issues related to building a coherent and effective system of youth development and career preparation for young people in the United States. $5. American Youth Policy Forum, 1001 Connecticut Avenue NW, Suite 719, Washington, DC 20036–5541; 202–775–9731.

Contextual Learning: A Critical Aspect of School-to-Work Transition Programs
A. Weinbaum and A.M. Rogers, 1995

This publication from the *Education Reform and School-to-Work Transition Series* reports on the benefits of contextual learning as well as the main contextual learning-related issues facing teachers. $12. Academy for Educational Development and National Institute for Work and Learning, 1875 Connecticut Avenue NW, Ninth Floor, Washington, DC 20009; 202–884–8000.

"Cooperative Education As a Strategy for School-to-Work Transition"
C. Ascher, January 1994; ED 365 798

This article from *CenterFocus* (No. 3) identifies barriers that must be overcome before cooperative education can be used as a model for expanded school-to-work transition efforts. It also offers insights from research on successful cooperative education programs. Free. National Center for Research in Vocational Education Materials Distribution Center, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455; 1–800–637–7652. You may also retrieve a free electronic copy through **http://vocserve.berkeley.edu/CenterFocus/cf3.html or ftp://vocserve.berkeley.edu/FTP/VocServe_BBS_Files/NCRVE_Materials/CF3.txt.**

Developing Systems of School-to-Work Transition: A Report on State Progress
National Governors' Association, July 1994; ED 374 223

This issue brief reports on states' progress in implementing school-to-work transition. It points out issues, problems, and challenges and includes tables illustrating state school-to-work system elements and school-to-work programs by state. Free. National Governors' Association, 444 North Capitol Street NW, Washington, DC 20001–1572; 202–624–5300.

Employers' Role in School-to-Work Opportunities
P.W. McNeil and C.D. Kulick, 1995

This publication from the *Education Reform and School-to-Work Transition Series* reports on the school-to-work transition efforts of five employers from five different industries and presents data about these employers' opinions of school-to-work transition. $12. Academy for Educational Development and National Institute for Work and Learning, 1875 Connecticut Avenue NW, Ninth Floor, Washington, DC 20009; 202–884–8000.

"Equity and Excellence in School-to-Work Transitions of Special Populations"
Dennis E. Mithaug, August 1994; ED 372 247

This article from *CenterFocus* (No. 6) identifies criteria for developing school-to-work transitions to ensure that all students, including those with disabilities, will be included in these efforts and will experience success as a result. Free. National Center for Research in Vocational Education Materials Distribution Center, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455; 1–800–637–7652. You may also access a free electronic copy through: **http://vocserve.berkeley.edu/CenterFocus/cf6.html or ftp://vocserve.berkeley.edu/FTP/VocServe_BBS_Files/NCRVE_Materials/CF6.mac.**

Evaluating School-to-Work Transition
M.T. Orr, 1995

This publication from the *Education Reform and School-to-Work Transition Series* is intended for individuals at the state and local levels who have responsibility for school-to-work opportunities. It focuses on recommended standard procedures for evaluating school-to-work transition programs. $12. Academy for Educational Development and National Institute for Work and Learning, 1875 Connecticut Avenue NW, Ninth Floor, Washington, DC 20009; 202–884–8000.

The Forgotten Half: Two-Thirds: An Hispanic Perspective on Apprenticeship, European Style
E.G. McKay, 1993; ED 361 431

This 75-page report from the National Council of La Raza's Consultation on Apprenticeship adds a Hispanic perspective to the current policy debate about European-style apprenticeships as a school-to-work transition option for noncollege-bound youth. It includes a set of 10 basic principles on which applications in the United States should be based. $11.55 plus postage. Order paper copy from the ERIC Document Reproduction Service, 7420 Fullerton Road, Suite 110, Springfield, VA 22153–2852; 1–800–443–3742.

Gathering Momentum! Transition from School to Work
Ohio Council on Vocational Education, 1994; ED 377 379

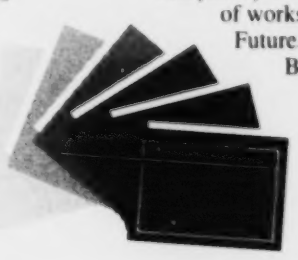
This report describes Ohio's experience in developing a school-to-work system and profiles 23 Ohio programs. Free. OCVE, 750 Brooksedge Boulevard, Suite 105, Westerville, OH 43081; 614–891–4764.

Home-Grown Lessons: Innovative Programs Linking Work and High School
E. Pauly, H. Kopp, and J. Haimson
January 1994; ED 369 939

This book presents findings and lessons on critical concerns of policy makers, educators, and employers from 16 innovative school-to-work programs in U.S. communities. Findings underscore the diversity of the school-to-work movement and provide strong evidence that a broad range of students is able to participate in them. $29.95 plus shipping. Jossey-Bass Publishers, 350 Sansome Street, San Francisco, CA 94104; 415–433–1767.

Improving the Transition from School to Work in the United States
R. Kazis, with P.E. Barton, 1993; ED 353 454

This study describes problems in school-to-work transition that need to be addressed; discusses trends in program and policy innovation at the local, state, and national levels that might respond to the challenges identified; and proposes policies. It includes a memorandum on youth transition that summarizes the complexity of the situation and examines the content of worksite-based approaches. $5. Jobs for the Future, One Bowdoin Square, 11th Floor, Boston, MA 02114; 617–742–5995.



In Their Own Words: Student Perspectives on School-to-Work Opportunities
Kevin Hollenbeck, 1996

This paper voices the opinions and perspectives of students about school-to-work opportunities, based on a case study of programs in Kalamazoo County, Michigan. Students participated in focus group discussions about their experiences in the programs and their opinions about program strengths and weaknesses. $12. National Institute for Work and Learning, Academy for Educational Development, 1875 Connecticut Avenue NW, Suite 900, Washington, DC 20009; 202–884–8186.

Learning from Experience: A Cross-case Comparison for School-to-Work Transition Reform Initiatives
Anne Rogers, Susan Hubbard, and others, 1995

This report analyzes how school-to-work reform affects clients and participants through case studies in 14 communities and describes 12 critical elements that research indicates are essential to any sound school-to-work system. $20. National Institute for Work and Learning, Academy for Educational Development, 1875 Connecticut Avenue NW, Suite 900, Washington, DC 20009; 202–884–8186.

Learning Through Work: Designing and Implementing Quality Worksite Learning for High School Students. School-to-Work Transition Project
S. Goldberger and others, January 1994; ED 369 940

Written to help practitioners and policy makers involve large numbers of employers in providing high-quality learning experiences in the workplace, this 145-page guide uses lessons from the field to provide advice to new programs. It introduces 10 basic design elements (for example, the nature of the partnership and the structure and content of workplace experiences) to describe how to organize, structure, deliver, and assess learning experiences at the worksite. $12. Manpower Demonstration Research Corporation, 3 Park Avenue, New York, NY 10016; 212–532–3200.

Learning to Work: Employer Involvement in School-to-Work Transition Programs
Thomas R. Bailey, editor, 1995

This volume, the result of a Brookings conference on employer participation in education, focuses on issues such as recruiting an adequate number of employers, ensuring the quality of placements, avoiding inequities in placements, and increasing participation and improving learning on the job. $9.95 plus $3 postage. The Brookings Institution; 1–800–275–1447.

Learning to Work: Making the Transition from School to Work
Congressional Office of Technology, September 1995

This book (Stock No. 052–003–01439–4) explores the potential and problems of work-based learning as a component of the school-to-work transition. $7. U.S. Government Printing Office, Superintendent of Documents, Mailstop: SSOP, Washington, DC 20402–9328; 202–512–1800.

National Assessment of Vocational Education. Final Report to Congress. Volume I. Summary and Recommendations
David Boesel and Laurel McFarland, 1994; ED 371 191

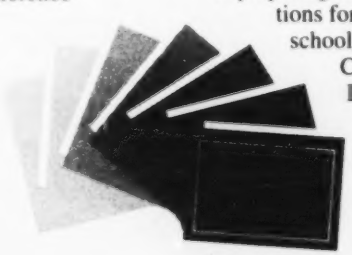
This report (Stock No. 065–000–00685–5) summarizes findings on the condition of vocational education in secondary and nonbaccalaureate institutions in terms of quality, participation, equity, funding, and administrative issues. It also offers recommendations for enhancing the next Pérkins Act in order to support a truly comprehensive system of preparation for work in this country. $4.75 ($41 for complete five-volume set). U.S. Government Printing Office, Superintendent of Documents, Mailstop: SSOP, Washington, DC 20402–9328; 202–512–1800.

Promoting a Dialogue on School-to-Work Transition
P. Brown, editor, 1995

This publication includes a paper by Marc Tucker, "The Leadership Challenge: Accommodating Different Perspectives on School to Work," and responses to that paper from a range of stakeholders in vocational education, business, and academic education. $10. Center for Policy Research, National Governors' Association, 444 North Capitol Street NW, Washington, DC 20001–1572; 202–624–5300.

Research on School-to-Work Transition Programs in the United States
D. Stern, N. Finkelstein, J.R. Stone, III, J. Latting, and C. Dornsife, March 1994; ED 369 923

This 200-page report (MDS–771) reviews research on school-to-work programs classified in two main categories: school-and-work arrangements that allow students to work and attend school and school-for-work programs that provide instruction with the express purpose of preparing students for work. It includes implications for localities and states designing new school-to-work systems. $11.50. National Center for Research in Vocational Education Materials Distribution Service, 46 Horrabin Hall, Western Illinois University, Macomb, IL 61455; 1–800–637–7652.



"Restructuring Students for Restructured Work: The Economy, School Reform, and Non-College-Bound Youths"
C.A. Ray and R.A. Mickelson, January 1993

This article from *Sociology of Education* (Vol. 66, No. 1, pp. 1–20) reviews claims by U.S. business leaders about evidence of defects in the public schools and argues that structural changes in the U.S. economy have had a negative impact on student motivation and have shaped the current sense of crisis in U.S. education. Check your library or purchase a copy from UMI InfoStore, 500 Sansome Street, Suite 400, San Francisco, CA 94111–3219; 1–800–248–0360.

The Role of Career Education in School-to-Work Transition
S. Katzman, editor, 1995

This report (Information Series No. 359) provides an overview of approaches to career education that complement school-to-work transition. Included are programmatic examples for assisting the school-to-work transition of noncollege-bound students, including youth apprenticeship; career academies; career resource centers; career guidance; and elementary, middle school, and high school career education. $8.75. Publications Center, Education and Training for Employment, The Ohio State University, 1900 Kenny Road, Columbus, OH 43210–1090; 1–800–848–4815.

The Role of Parents in School-to-Work Transition
William Rioux, 1995

This paper suggests ways for teachers, administrators, counselors, and other school personnel to view parents as resources and bring them into the school-to-work process. $12. National Institute for Work and Learning, Academy for Educational Development, 1875 Connecticut Avenue NW, Suite 900, Washington, DC 20009; 202–884–8186.

School to Work and Community Economic Development: Identifying Common Ground
Jobs for the Future, 1995

This paper from a national conference of leaders from the school-to-work and community economic development movements discusses how a community development perspective can strengthen local and state school-to-work efforts. The early experiences of economic development advocates in implementing school-to-work initiatives are also discussed. $10. Jobs for the Future, One Bowdoin Square, Boston, MA 02114; 617–742–5995.

School-to-Work Opportunities Through the Lens of Youth Development
Shepherd Zeldin and Ivan Charner, 1995

This paper focuses on how school-to-work systems can be strengthened by considering a youth development perspective and involving national and community-based youth organizations. $12. National Institute for Work and Learning, Academy for Educational Development, 1875 Connecticut Avenue NW, Suite 900, Washington, DC 20009; 202–884–8186.

"School-to-Work Programs in Postsecondary Education"
Morton Inger, January 1995; ED 379 430

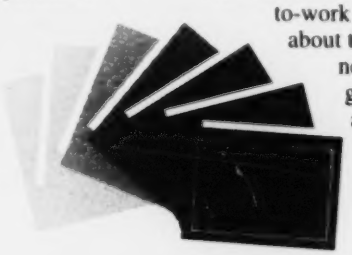
This article from *CenterFocus* (No. 7) focuses on school-to-work programs in 2-year colleges, including co-op, traditional apprenticeship, and three-way partnerships. It also offers recommendations from research findings on school-to-work programs in postsecondary institutions. Free. National Center for Research in Vocational Education Materials Distribution Center, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455; 1–800–637–7652. You may also access a free electronic copy through: **http://vocserve.berkeley.edu/CenterFocus/cf7.html or ftp://vocserve.berkeley.edu/FTP/VocServe_BBS_Files/NCRVE_Materials/CF7.mac.**

School-to-Work Transition and Its Role in the Systemic Reform of Education: The Experience of Jefferson County, Kentucky, and the Kentucky Education Reform Act
R. M. J. Kyle, 1995

This publication in the *Education Reform and School-to-Work Transition Series* uses a case study of Jefferson County, Kentucky, to examine the role of school-to-work transition in the broader context of K–12 systemic reform. $12. Academy for Educational Development and National Institute for Work and Learning, 1875 Connecticut Avenue NW, Ninth Floor, Washington, DC 20009; 202–884–8000.

School-to-Work: What Does the Research Say About It?
U.S. Department of Education, June 1994; ED 371 206

The series of commissioned papers that make up this volume addresses several questions related to school-to-work transition, including what we know about the German system, what we know about noncollege-bound youth, what relevant governance issues need to be examined, and, given what we know, where we go to create a system. $12. Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250–7954; 202–512–1800.



"Shaping the Curriculum To Fit the Need"
M. Greenberg, November 1993

This article in *Journal of Career Planning and Employment* (Vol. 54, No. 1, pp. 58–61) describes DeVry Institute of Technology, discussing its multifaceted, evolving curriculum development process that relies on a decentralized approach, continual involvement, and the interaction of employers, alumni, faculty, students, and placement directors. Check your library or purchase a copy from UMI InfoStore, 500 Sansome Street, Suite 400, San Francisco, CA 94111–3219; 1–800–248–0360.

Transition: School to Work Models for Effective Transition Planning
F. J. Krieg, P. Brown, and J. Ballard, 1995

This book shows readers how to use a systematic, transdisciplinary team approach to helping students with disabilities move from secondary education to meaningful employment. It describes the roles and responsibilities of students, parents, school psychologists, counselors, special educators, school administrators, vocational rehabilitation counselors, and community agencies. $29.95 plus $6.75 handling. National Association of School Psychologists, 4340 East-West Highway, Suite 402, Bethesda, MD 20814; 301–657–0270.

"Understanding and Applying Child Labor Laws to Today's School-to-Work Transition Programs"
Dorianne Beyer, April 1995; ED 380 698

This article from *CenterFocus* (No. 8) defines the child labor laws according to the Federal Fair Labor Standards Act, including occupational provisions by age group, hours worked, and age certificates. It also contains a list of child labor resources for each state. Free. National Center for Research in Vocational Education Materials Distribution Center, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455; 1–800–637–7652. You may also access a free electronic copy through **http://vocserve.berkeley.edu/CenterFocus/cf8.html or ftp://vocserve.berkeley.edu/FTP/VocServe_BBS_Files/NCRVE_Materials/CF8.mac.**

Vocational Education Journal
Vol. 69, No. 3; March 1994

Eight articles within this issue of *Vocational Education Journal* focus on the theme of school-to-work transition. Included is information about work-based education, youth apprenticeship, cooperative education, tech prep, and innovative programs. Check your library or order a back copy for $4 from American Vocational Association, 1410 King Street, Alexandria, VA 22314; 1–800–826–9972.

Workplace Mentoring for Youth: Context, Issues, Strategies
M. Freedman and R. Baker, 1995

This publication in the *Education Reform and School-to-Work Transition Series* reviews workplace mentoring programs for youth and presents suggestions distilled from research on the best practices in workplace mentoring programs targeting youth. Academy for Educational Development and National Institute for Work and Learning, 1875 Connecticut Avenue NW, Ninth Floor, Washington, DC 20009; 202–884–8000.

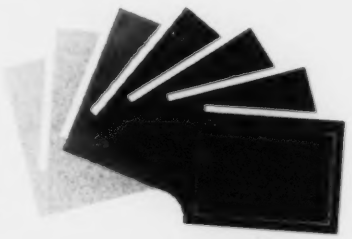
"Youth Apprenticeship: Lessons from the U.S. Experience"
T. Bailey and D. Merritt; July 1993; ED 361 526

This article from *CenterFocus* (No. 1) compares components of youth apprenticeship programs with school-to-work program models, including agriculture education, cooperative education, career academies, and tech prep. It also assesses how the four components of youth apprenticeship work in these four program models. Free. National Center for Research in Vocational Education Materials Distribution Center, Western Illinois University, 46 Horrabin Hall, Macomb, IL 61455; 1–800–637–7652. You may also retrieve a free electronic copy through **http://vocserve.berkeley.edu/CenterFocus/cf1.html** or **ftp://vocserve.berkeley.edu/FTP/VocServe_BBS_Files/NCRVE_Materials/CF1.txt.**

Youth Apprenticeships and School-to-Work Transition: Current Knowledge and Legislative Strategy
P. Osterman and M. Iannozzi, 1993; ED 363 763

This working paper highlights principles that should be followed in designing youth apprenticeship programs and outlines desired characteristics of a youth employment policy. Free. National Center on the Educational Quality of the Workforce, University of Pennsylvania, Institute for Research on Higher Education, 4200 Pine Street, Room 5A, Philadelphia, PA 19104–4090; 1–800–437–9799.

- Compiled by Susan Imel, Director, ERIC Clearinghouse on Adult, Career, and Vocational Education



News From the ERIC System

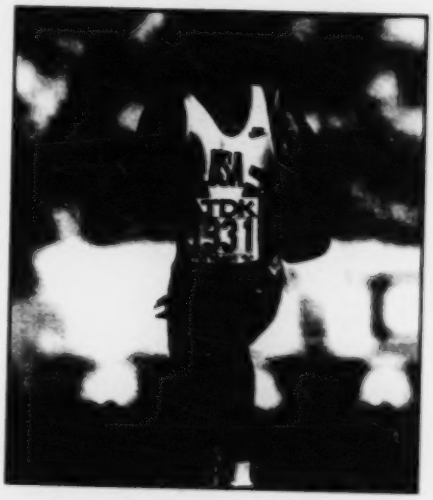
ERIC Web Sites Win Awards

Many ERIC Clearinghouses use the Internet to provide reference and referral services to educators, students, parents, librarians, and others. Several ERIC Web sites have been recognized recently for their high-quality content and innovative designs. Named among the "Top 5 Percent of All Websites" by Point Communications are:

- **AskERIC**, ERIC Clearinghouse on Information & Technology (http://ericir.syr.edu)
- **National Parent Information Network (NPIN)**, ERIC Clearinghouses on Elementary and Early Childhood Education and on Urban Education (http://ericps.ed.uiuc.edu/npin/npinhome.html)
- **UEWeb**, ERIC Clearinghouse on Urban Education (http://eric-web.tc.columbia.edu)

AskERIC and the ERIC Clearinghouse on Reading, English, and Communication's Web sites were also named Magellan "4 Star Sites" by the McKinley Group.

ERIC Clearinghouse on Educational Management Sponsors Dan O'Brien Work Hard in School Program



The ERIC Clearinghouse on Educational Management, located at the University of Oregon, has launched a program that encourages middle school students, especially those who are at risk of failing or dropping out of school, to make a commitment to their education.

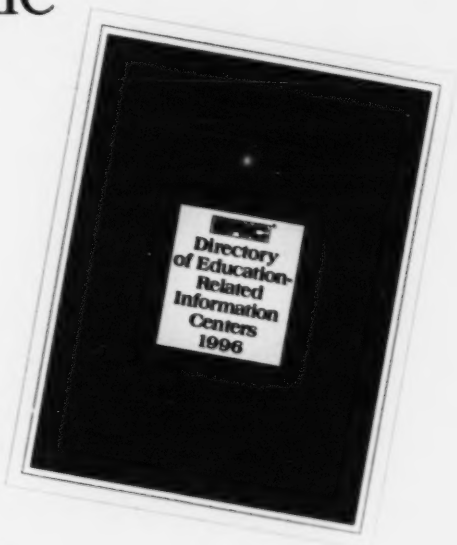
The program highlights the achievements of Dan O'Brien, a realistic role model who has overcome hardships to hold the world record in the decathlon. Teachers display a colorful poster of O'Brien with the motivational message, "Keep your mind on track. Work hard in school." Text at the bottom of the poster encourages students to write to Dan in care of the clearinghouse. Students who respond receive a letter, biography, and two large Dan O'Brien trading cards. The materials feature sports-related statistics on the athlete as well as information highlighting the value of an education.

Stuart Smith, associate director for publications, developed the program, which was awarded a Distinguished Achievement Award from the Educational Press Association of America.

To obtain a Dan O'Brien poster for display in your school or classroom, write to ERIC/CEM, 5207 University of Oregon, Eugene, OR 97403–5207. The posters are free, but enclose $3 for shipping and handling (checks payable to University of Oregon/ERIC). Students who write to the clearinghouse will receive the sports cards, biography, and letter from Dan at no charge.

News From the ERIC System

New Education Directories Available from ACCESS ERIC



ACCESS ERIC announces three valuable new resources for educators, administrators, policy makers, librarians, journalists, and students.

1996 ERIC Calendar of Education-Related Conferences. Invaluable for planning professional development and networking opportunities, this publication contains entries for more than 500 international, national, and regional education conferences. Each entry includes conference dates, location, topics, sponsor information, and more. $20, including shipping and handling.

ERIC Directory of Education-Related Information Centers 1996. This directory describes the services of more than 450 organizations that offer education information and technical assistance. A comprehensive subject index makes it easy to locate organizations. $17, including shipping and handling.

Catalog of ERIC Clearinghouse Publications 1996. The 1996 Catalog lists more than 1,200 research summaries, teaching guides, bibliographies, and monographs produced by the ERIC Clearinghouses and currently available for distribution, many of them for free. The Catalog is organized by ERIC component and includes a subject index and ordering information. $12, including shipping and handling.

To order, call 1–800–LET–ERIC, send a fax to 301–309–2084, e-mail acceric@inet.ed.gov, or write to ACCESS ERIC, 1600 Research Boulevard, Rockville, MD 20850–3172.

Ely Appointed to National Library of Education Task Force

Donald P. Ely, Professor Emeritus, Syracuse University, and founding director of the ERIC Clearinghouse on Information & Technology, has been appointed by U.S. Secretary of Education Richard Riley to serve on the National Library of Education Advisory Task Force. The 12-member task force will recommend ways to strengthen partnerships and cooperation between the National Library and researchers, education practitioners, other federal agencies and programs, and policy makers at all levels. The Educational Resources Information Center became part of the U.S. Department of Education's National Library in a recent reorganization.

Putting It All Together: An Action Plan

Communities that build successful school-to-work systems often find that the best way to begin is to identify and study a successful model that enlists the active support of educators, employers, parents, labor organizations, and community organizations. We hope you will use the resources cited in this issue as a starting point in your exploration. Here are some additional ideas to help you get started.

If you are an educator:

- Bring colleagues together with employers, parents, and representatives of higher education, labor, and community-based organizations to plan and implement a school-to-work system.
- Learn about and experiment with curricula that are compatible with school-to-work opportunities. Request "how to" manuals from proven model programs.
- Help students become aware of the range of career options they can pursue through school-to-work programs.
- Invest in professional development to prepare teachers, counselors, and administrators to be partners in reforming the education system.
- Recognize the importance of counselors in building successful school-to-work systems.

If you are an employer:

- Form a partnership with educators, other interested employers, union members, and representatives of community-based organizations to plan and start a school-to-work system in your community.
- Help schools develop courses that will prepare students for good jobs in your community.
- Provide students with work experiences that reinforce and expand upon what they are learning in the classroom.
- Hire qualified graduates of school-to-work programs.

If you are a parent:

- Let educators, civic organizations, and others know of your interest in bringing school-to-work opportunities to your community.
- Volunteer to help build the system and keep it going.
- Urge your employer to provide work experience for students and volunteer to be a mentor or supervisor for them.
- Help your children understand the relationship between learning and earning. Teach them that performance counts, both in school and on the job.
- Encourage local schools and employers to require and reward achievement.

If you are a member of a labor organization:

- Collaborate with state and local officials, employers, and schools to design a local school-to-work system.
- Mobilize your local union training committee to offer high-quality training and meaningful work experience to students in school-to-work programs.
- Become a mentor in the workplace.
- Provide students and parents with information on jobs that are available in your community.
- Educate your organization about school-to-work initiatives through your union's local education officer.

If you are a member of a community-based organization:

- Collaborate with state and local officials, employers, and schools to design a local school-to-work system that reaches all youth, including dropouts and students with disabilities.
- Work with educators and employers to ensure opportunities for young women to participate in school-to-work programs.
- Work with employers and schools to provide opportunities for students who might have low achievement levels or limited English proficiency.
- Serve as a broker among local employers, schools, and parents to help them establish working partnerships.
- Mobilize support for students most at risk of failure or dropping out.

ERIC Directory

Educational Resources Information Center (ERIC)
U.S. Department of Education
Office of Educational Research and Improvement (OERI)
555 New Jersey Avenue NW
Washington, DC 20208–5720
Telephone: (202) 219–2289
Internet: eric@inet.ed.gov

Clearinghouses

Adult, Career, and Vocational Education
The Ohio State University
1900 Kenny Road
Columbus, OH 43210–1090
Toll Free: (800) 848–4815
Telephone: (614) 292–4353
Internet: ericacve@magnus.acs.ohio-state.edu

Assessment and Evaluation
The Catholic University of America
210 O'Boyle Hall
Washington, DC 20064
Toll Free: (800) 464–3742
Telephone: (202) 319–5120
Internet: eric_ae@cua.edu

Community Colleges
University of California at Los Angeles
3051 Moore Hall
Los Angeles, CA 90024–1521
Toll Free: (800) 832–8256
Telephone: (310) 825–3931
Internet: ericcc@ucla.edu

Counseling and Student Services
University of North Carolina at Greensboro
School of Education
101 Park Building
Greensboro, NC 27412–5001
Toll Free: (800) 414–9769
Telephone: (910) 334–4114
Internet: ericcass@iris.uncg.edu

Disabilities and Gifted Education
Council for Exceptional Children
1920 Association Drive
Reston, VA 22091–1589
Toll Free: (800) 328–0272
Telephone: (703) 264–9474
TDD: (703) 264–9449
Internet: ericec@inet.ed.gov

Educational Management
College of Education
1787 Agate Street, Room 100
5207 University of Oregon
Eugene, OR 97403–5207
Toll Free: (800) 438–8841
Telephone: (503) 346–5043
Internet: ppiele@oregon.uoregon.edu

Elementary and Early Childhood Education
University of Illinois
805 West Pennsylvania Avenue
Urbana, IL 61801–4897
Toll Free: (800) 583–4135
Telephone: (217) 333–1386
Internet: ericeece@ux1.cso.uiuc.edu

Higher Education
The George Washington University
One Dupont Circle NW, Suite 630
Washington, DC 20036–1183
Toll Free: (800) 773–3742
Telephone: (202) 296–2597
Internet: eriche@inet.ed.gov

Information & Technology
Syracuse University
4–194 Center for Science and Technology
Syracuse, NY 13244–4100
Toll Free: (800) 464–9107
Telephone: (315) 443–3640
Internet: eric@ericir.syr.edu
AskERIC (Internet-based question-answering service): askeric@ericir.syr.edu

Languages and Linguistics
Center for Applied Linguistics
1118 22nd Street NW
Washington, DC 20037–0037
Toll Free: (800) 276–9834
Telephone: (202) 429–9292
Internet: eric@cal.org

Reading, English, and Communication
Indiana University
Smith Research Center, Suite 150
2805 East 10th Street
Bloomington, IN 47408–2698
Toll Free: (800) 759–4723
Telephone: (812) 855–5847
Internet: ericcs@ucs.indiana.edu

Rural Education and Small Schools
Appalachia Educational Laboratory
1031 Quarrier Street
P.O. Box 1348
Charleston, WV 25325–1348
Toll Free: (800) 624–9120
Telephone: (304) 347–0400
Internet: lanhamb@ael.org

Science, Mathematics, and Environmental Education
The Ohio State University
1929 Kenny Road
Columbus, OH 43210–1080
Toll Free: (800) 276–0462
Telephone: (614) 292–6717
Internet: ericse@osu.edu

Social Studies/Social Science Education
Indiana University
Social Studies Development Center
2805 East 10th Street, Suite 120
Bloomington, IN 47408–2698
Toll Free: (800) 266–3815
Telephone: (812) 855–3838
Internet: ericso@indiana.edu

Teaching and Teacher Education
American Association of Colleges for Teacher Education
One Dupont Circle NW, Suite 610
Washington, DC 20036–1186
Toll Free: (800) 822–9229
Telephone: (202) 293–2450
Internet: ericsp@inet.ed.gov

Urban Education
Box 40, Teachers College
Columbia University
New York, NY 10027–6696
Toll Free: (800) 601–4868
Telephone: (212) 678–3433
Internet: eric-cue@columbia.edu

Adjunct Clearinghouses

Art Education
Indiana University
Social Studies Development Center
2805 East 10th Street, Suite 120
Bloomington, IN 47408–2373
Toll Free: (800) 266–3815
Telephone: (812) 855–3838
Internet: ericso@indiana.edu

Chapter 1 (Compensatory Education)
Chapter 1 Technical Assistance Center
PRC, Inc.
2601 Fortune Circle East
One Park Fletcher Building, Suite 300–A
Indianapolis, IN 46241–2237
Toll Free: (800) 456–2380
Telephone: (317) 244–8160
Internet: prcinc@delphi.com

Child Care
National Child Care Information Center
301 Maple Avenue West
Vienna, VA 22180
Toll Free: (800) 616–2242
Telephone: (703) 938–6555
Internet: agoldstein@acf.dhhs.gov

Clinical Schools
American Association of Colleges for Teacher Education
One Dupont Circle NW, Suite 610
Washington, DC 20036–1186
Toll Free: (800) 822–9229
Telephone: (202) 293–2450
Internet: iabdalha@inet.ed.gov

Consumer Education
National Institute for Consumer Education
207 Rackham Building, West Circle Drive
Eastern Michigan University
Ypsilanti, MI 48197–2237
Toll Free: (800) 336–6423
Telephone: (313) 487–2292
Internet: nice@emuvax.emich.edu

ESL Literacy Education
Center for Applied Linguistics
1118 22nd Street NW
Washington, DC 20037
Telephone: (202) 429–9292, Extension 200
Internet: ncle@cal.org

Law-Related Education
Indiana University
Social Studies Development Center
2805 East 10th Street, Suite 120
Bloomington, IN 47408–2698
Toll Free: (800) 266–3815
Telephone: (812) 855–3838
Internet: ericso@indiana.edu

Test Collection
Educational Testing Service
Princeton, NJ 08541
Telephone: (609) 734–5737
Internet: mhalpern@rosedale.org

U.S.-Japan Studies
Indiana University
Social Studies Development Center
2805 East 10th Street, Suite 120
Bloomington, IN 47408–2698
Toll Free: (800) 266–3815
Telephone: (812) 855–3838
Internet: eabrooks@indiana.edu

Support Components

ACCESS ERIC
1600 Research Boulevard
Rockville, MD 20850–3172
Toll Free: (800) LET–ERIC (538–3742)
Telephone: (301) 251–5264
Internet: acceric@inet.ed.gov

ERIC Document Reproduction Service
7420 Fullerton Road, Suite 110
Springfield, VA 22153–2852
Toll Free: (800) 443–ERIC (3742)
Telephone: (703) 440–1400
Internet: edrs@inet.ed.gov

ERIC Processing and Reference Facility
Computer Sciences Corporation
Systems Engineering Division
1100 West Street, Second Floor
Laurel, MD 20707–3598
Toll Free: (800) 799–ERIC (3742)
Telephone: (301) 497–4080
Internet: ericfac@inet.ed.gov

BEST COPY AVAILABLE

United States
Department of Education
Washington, DC 20208–5720

Official Business
Penalty for Private Use, $300

Bulk Rate
Postage and Fees Paid
U.S. Department of Education
Permit No. G–17

13444
TOM RUSK VICKERY
SYRACUSE UNIVERSITY
CULTURAL FOUNDATIONS
259 HUNTINGTON HALL
SYRACUSE NY 13244-2340

96–5027